R 352

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PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
ARP2772

STEREO RECEIVER

SX-302 HE, HB, HEWZ

- **Refer to the service manual ARP2223 for SX−339/HE.**

- **This manual is applicable to SX−302/HE, HB and HEWZ.**

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CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

SX−302/HE, HB, HEWZ and SX−339/HE have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		SX−339/HE	SX−302/HE	SX−302/HB	SX−302/HEWZ	
	CONTROL assembly	AWZ3299	AWZ4877	AWZ4877	AWZ4877	
	COMPLEX assembly	AWZ3312	AWZ3312	AWZ3312	AWZ3311 *	
NSP	SP SWITCH assembly	AWZ3007	AWZ3307	AWZ3307	AWZ3000 *	
NSP	SP TERMINAL assembly	AWZ3306	AWZ3306	AWZ3306	AWZ3302 *	
NSP	LINE FILTER assembly	....	....	....	AWZ3002 *	
⚠	C1 capacitor (0.1)	....	....	....	ACE−507 *	
⚠	C1 capacitor (0.022)	ACG1030	ACG1030	ACG1030	....	
⚠	AC power cord	ADG1021	ADG1049	ADG1118	ADG1049	
⚠	Strain relief	....	AEC−882	AEC−882	AEC−882	For AC power cord
	Front panel	ANB1444	ANB1565	ANB1565	ANB1565	
NSP	Rear panel	ANC1679	ANC2086	ANC2086	ANC2085	
	Panel	AAK2124	AAK2477	AAK2477	AAK2477	
	Name plate	AAM1029	VAM1032	VAM1032	VAM1032	
	Push knob (LOUDNESS)	....	AAD1771	AAD1771	AAD1771	Refer to Fig. 1
	Function knob	AAD1812	AAD2454	AAD2454	AAD2454	
	Screw (EARTH)	....	....	....	ABA1047 *	
	PCB holder	....	....	....	ANG1062 *	
	Packing case	AHD2019	AHD2647	AHD2603	AHD2647	
	Remote control unit (CU−SX022)	AXD1198	....	....	....	
	Remote control unit (CU−SX070)	....	AXD1364	AXD1364	AXD1364	
	FM antenna assembly	....	....	....	ADH1002 *	
	FM antenna	ADH1004	ADH1004	ADH1004	....	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1182	ARE1286	....	....	
	Operating instructions (English)	....	....	ARB1445	....	
	Operating instructions (German)	....	....	....	ARC1435	

*Note : All the assemblies and the parts with * are the same as those of SX−339/HEWZ type in the service manual ARP2223 for SX−339. Therefore, refer to SX−339/HEWZ type.*

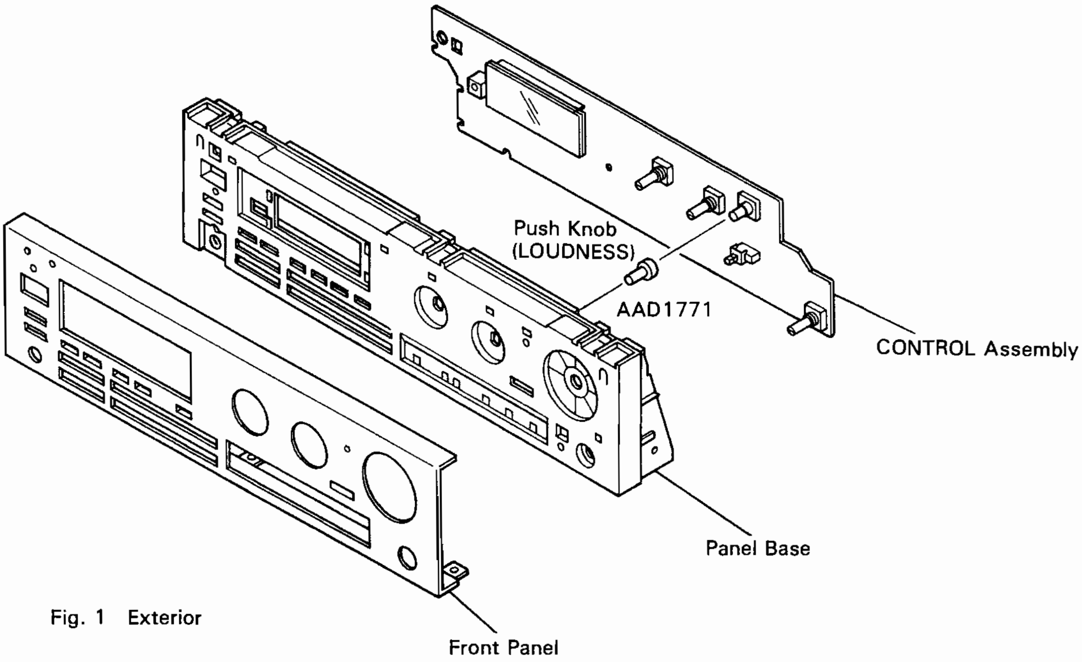

Push Knob
(LOUDNESS)
AAD1771
CONTROL Assembly
Panel Base
Front Panel

Fig. 1 Exterior

CONTROL ASSEMBLY

AWZ4877 and AWZ3299 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ3299	AWZ4877	
	S302 (LOUDNESS)	....	ASG1041	
	C321, C322	....	CCCSL390J50	
	C323, C324	....	CEAS100M50	
	C325, C326	....	CFTXA104J50	
	C327, C328	....	CFTXA823J50	
	R327, R328	RD1/8PM122J	RD1/8PM332J	
	R329, R330	RD1/8PM222J	RD1/8PM821J	
	R331, R332	....	RD1/8PM154J	
	R333, R334	....	RD1/8PM332J	
	R335, R336	....	RD1/8PM182J	
	R337, R338	....	RD1/8PM392J	
	R339, R340	....	RD1/8PM223J	
	R341, R342	....	RD1/8PM152J	
	R343, R344	....	RD1/8PM122J	

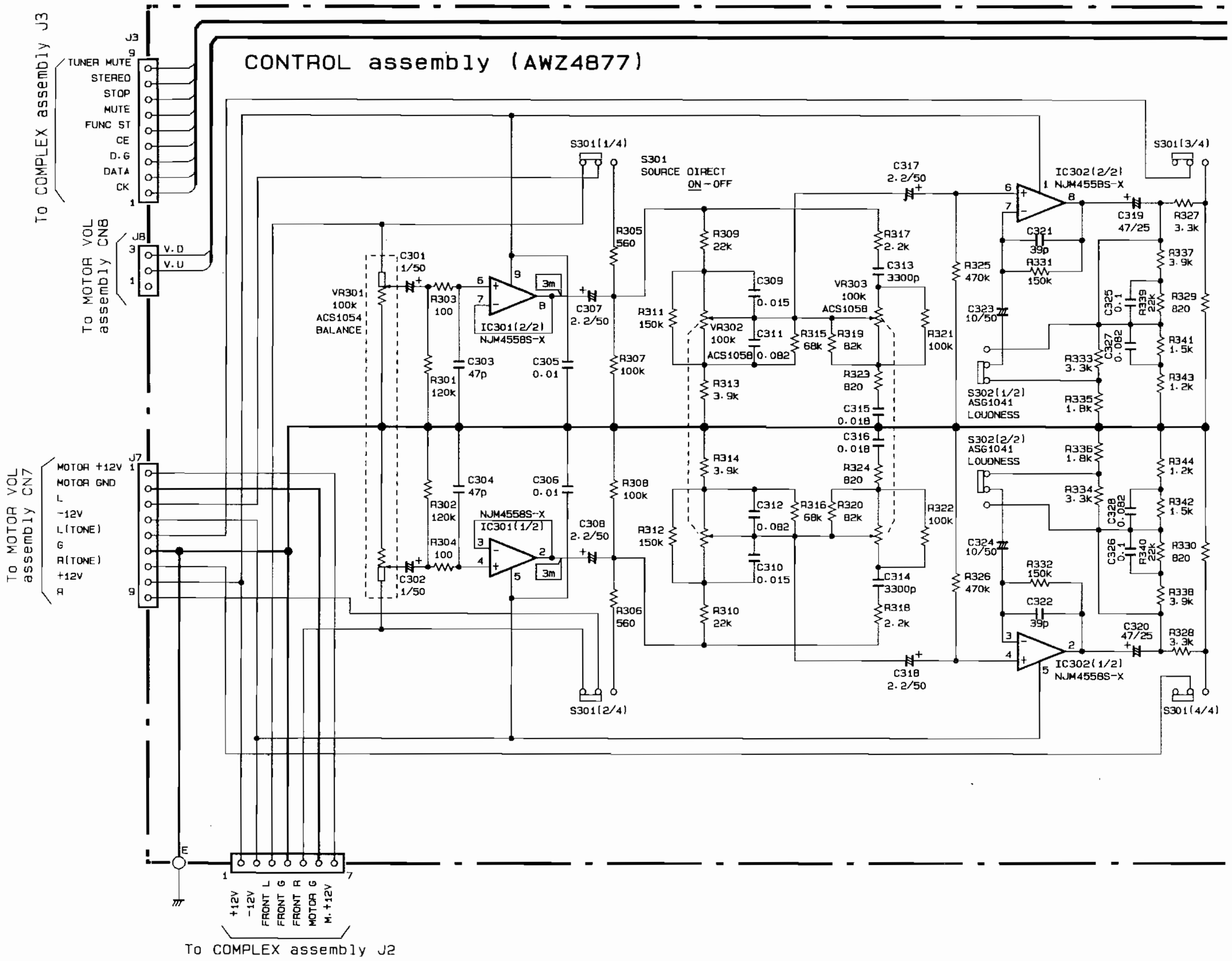
SCHEMATIC DIAGRAM AND PCB PATTERN

- For assemblies which are different in SX−302/HE, HB, HEWZ and SX−339/HE, the schematic diagram and PCB pattern are shown below.

CONTROL ASSEMBLY

Schematic Diagram

- The differences in schematic diagram between AWZ4877 and AWZ3299 are as follows.


CONTROL assembly (AWZ4877)
To COMPLEX assembly J3
J3
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.G
DATA
CK
To MOTOR VOL assembly CN8
J8
V.D
V.U
To MOTOR VOL assembly CN7
J7
MOTOR +12V
MOTOR GND
L
-12V
L(TONE)
G
R(TONE)
+12V
R
S301(1/4)
S301 SOURCE DIRECT ON-OFF
S301(2/4)
S301(3/4)
S301(4/4)
VR301 100k ACS1054 BALANCE
C301 1/50
C302 1/50
R303 100
R304 100
R301 120k
R302 120k
C303 47p
C304 47p
C305 0.01
C306 0.01
IC301(2/2) NJM4558S-X
IC301(1/2) NJM4558S-X
3m
C307 2.2/50
C308 2.2/50
R305 560
R306 560
R307 100k
R308 100k
R311 150k
R312 150k
R309 22k
R310 22k
R313 3.9k
R314 3.9k
C309 0.015
C310 0.015
VR302 100k ACS1058
C311 0.082
C312 0.082
R315 68k
R316 68k
R319 82k
R320 82k
VR303 100k ACS1058
R317 2.2k
R318 2.2k
C313 3300p
C314 3300p
R321 100k
R322 100k
R323 820
R324 820
C315 0.018
C316 0.018
C317 2.2/50
C318 2.2/50
R325 470k
R326 470k
C323 10/50
C324 10/50
S302(1/2) ASG1041 LOUDNESS
S302(2/2) ASG1041 LOUDNESS
IC302(2/2) NJM4558S-X
IC302(1/2) NJM4558S-X
C321 39p
C322 39p
R331 150k
R332 150k
C319 47/25
C320 47/25
R327 3.3k
R328 3.3k
R337 3.9k
R338 3.9k
C325 0.1
C326 0.1
R339 22k
R340 22k
R329 820
R330 820
C327 0.082
C328 0.082
R333 3.3k
R334 3.3k
R341 1.5k
R342 1.5k
R343 1.2k
R344 1.2k
R335 1.8k
R336 1.8k
E
+12V
-12V
FRONT L
FRONT G
FRONT R
MOTOR G
M.+12V
To COMPLEX assembly J2

Note: Type 1

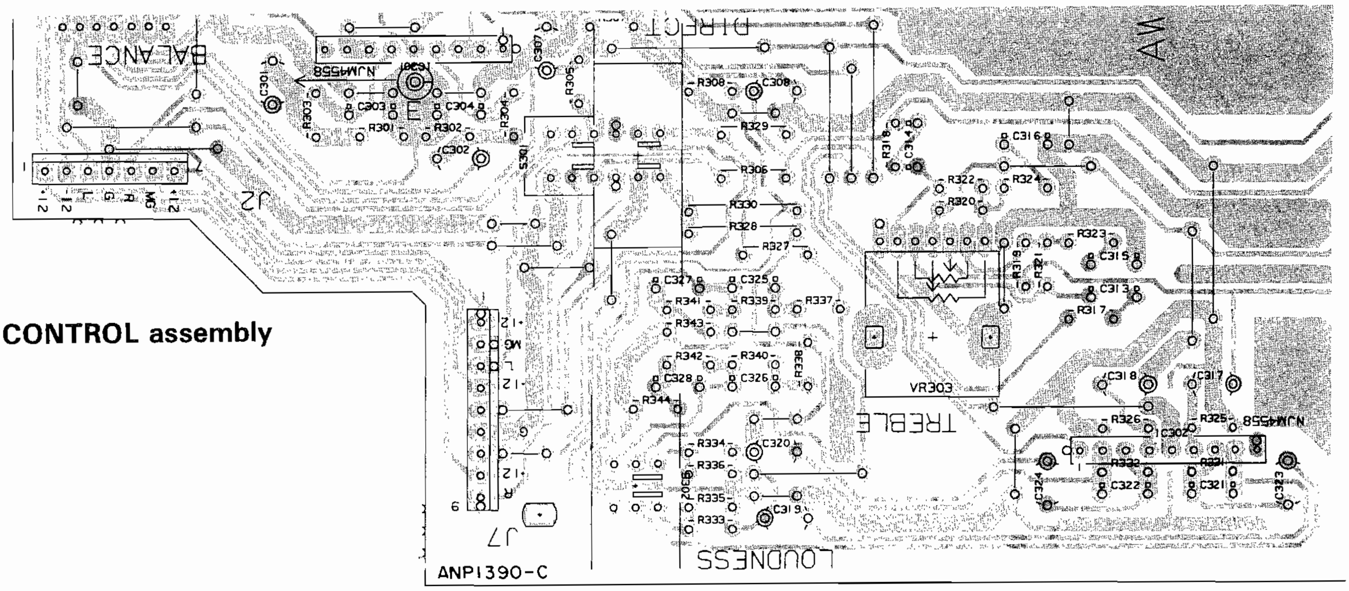
1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   V : Signal voltage at rated output.
   : DC voltage (V) at no input signal unless otherwise noted. Value in ( ) is DC voltage at rated power.
   mV : Signal voltage at FM 1kHz, 100% MOD.
   ⇦ mA or ← mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

CONTROL assembly
S302 LOUDNESS

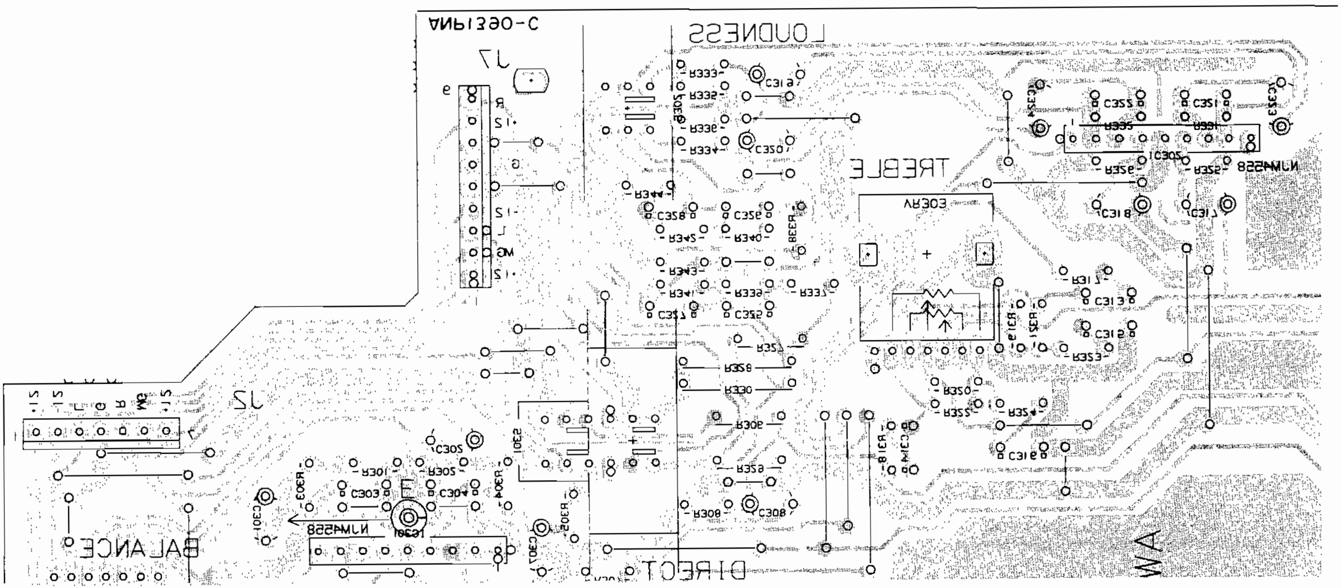
PCB Pattern

- The differences in PCB patterns between AWZ4877 and AWZ3299 are as follows.

CONTROL assembly


BALANCE
NJM4558
DIRECT
TREBLE
VR303
LOUDNESS
J7
J2
ANP1390-C
IC301
IC302

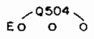
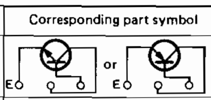
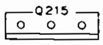
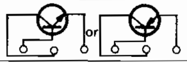
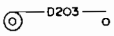
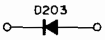
This PCB connection diagram is viewed from the parts mounted side.

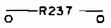
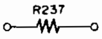
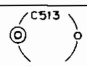
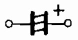
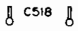
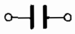

ANP1390-C
LOUDNESS
TREBLE
VR303
NJM4558
BALANCE
DIRECT
J7
J2

This PCB connection diagram is viewed from the foil side.

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.
3. The capactor terminal marked with ◎(double circles) shows negatine terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode

P.C.B. pattern diagram indication	Corresponding part symbol	Part Nama
		Resistor
		Capacitor (Polarized)
		Capacitor (Non-polarized)

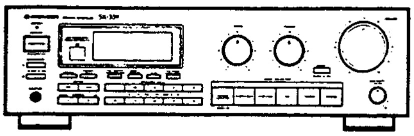
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay

P.C.B. pattern diagram indication	Part Name
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2223

STEREO RECEIVER

SX-339

SX-229

SX−229 AND SX−339 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	SX−229	SX−339		
HE	○	○	AC220V−AC230V, 240V (Switchable) *	
HB	○	○	AC220V−AC230V, 240V (Switchable) *	
HEWZ	○	○	AC220V−AC230V, 240V (Switchable) *	
YPW	○	—	AC240V only	

* Change the connection of the power transformer primary taps.

- **This manual is applicable to the SX−229/HE, HB, HEWZ, YPW, SX−339/HE, HB and HEWZ types.**
- **As to the SX−229/HB, HEWZ and YPW types, refer to pages 64, 65.**
- **As to the SX−339/HB and HEWZ types, refer to pages 66−68.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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2362

1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

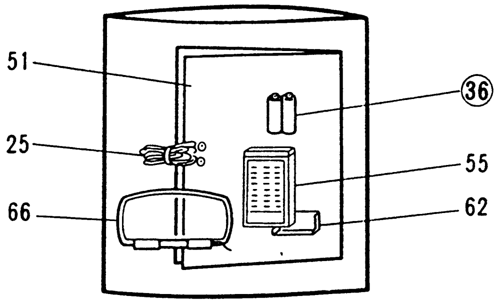
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

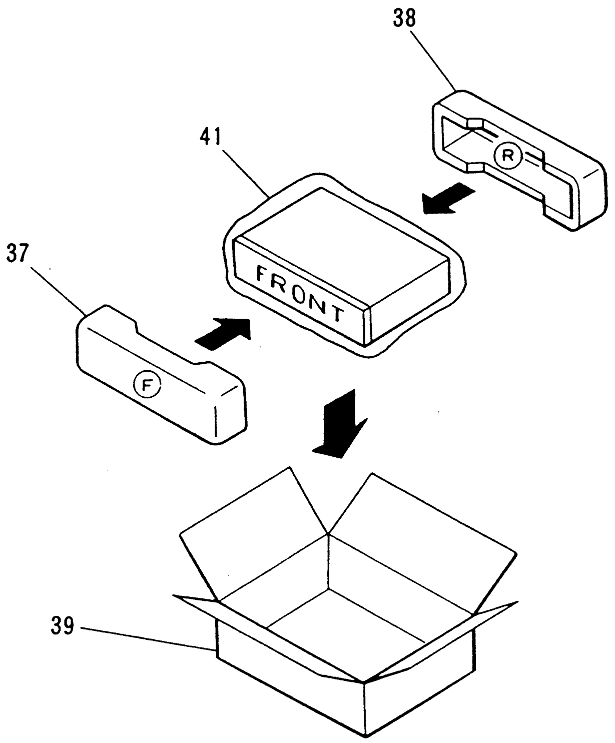
Parts list of Exterior and Packing

Mark	No.	Description	Parts No.
	1	VOL KNOB (VOLUME) (SX-339)	AAB1152
	1	VOL KNOB (VOLUME) (SX-229)	AAB1153
	2	ROTARY KNOB (BALANCE)	AAB1154
	3	KNOB (TREBLE, BASS)	AAB1221
	4	KNOB (POWER)	AAD1661
	5	SPEAKER KNOB	AAD1662
	6	PUSH KNOB (DIRECT)	AAD1811
	7	FUNCTION KNOB	AAD1812
	8	STATION KNOB (SX-339)	AAD1982
	8	STATION KNOB (SX-229)	AAD1810
	9	PLATE	AAK1979
	10	PANEL (SX-339)	AAK2124
	10	PANEL (SX-229)	AAK2125
	11	NAME PLATE (METAL)	AAM1029
	12	CONTROL ASSEMBLY (SX-339)	AWZ3299
	12	CONTROL ASSEMBLY (SX-229)	AWZ3307
	13	SCREW	ABA-298
	14	SCREW (STEEL)	ABA1007
	15	SCREW (STEEL)	ABA1009
	16	SCREW (STEEL)	ABA1011
	17	SCREW (STEEL)	ABA1026
	18	SCREW (STEEL)	ABA1048
	19	SCREW	ABA1052
	20	SCREW	ABA1054
	21	SCREW	ABA1082
	22	COIL SPRING	ABH1064
	23	NUT	ABN-065
⚠	24	AC POWER CORD	ADG1021
	25	FM ANTENNA	ADH1004
	26	SPACER	
	27	NYLON BINDER	
	28	PCB SUPPORT	
	29	PCB SUPPORT (SX-339 only)	
	30	BARRIER	
	31	PCB SPACER (SX-339 only)	
	32	PCB SPACER (SX-339 only)	
	33	COMPLEX ASSEMBLY (SX-339)	AWZ3312
	33	COMPLEX ASSEMBLY (SX-229)	AWZ3315
	34	SHEET	AEE1014
	35	CLAMPER	
	36	DRY CELL BATTERIES (R03,"AAA") (SX-339 only)	
	37	FRONT PAD	AHA1336
	38	REAR PAD	AHA1337
	39	PACKING CASE (SX-339)	AHD2019
	39	PACKING CASE (SX-229)	AHD2020
	40	SP SWITCH ASSEMBLY	
	41	PACKING SHEET	AHG1016
	42	TERMINAL SCREW	
	43	PANEL BASE (SX-339)	AMB1792
	43	PANEL BASE (SX-229)	AMB1791
	44	INDICATING LENS (SX-339 only)	AMR1160
	45	INSULATOR ASSEMBLY	AMR2140
	46	CHASSIS	
	47	FRONT PANEL (SX-339)	ANB1444
	47	FRONT PANEL (SX-229)	ANB1445
	48	REAR PANEL	
	49	SCREW (SX-229 only)	BPZ26P080FMC
	50	HEAT SINK	
	51	OPERATING INSTRUCTIONS (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1182
	52	SP TERMINAL ASSEMBLY	
	53	MOTOR VOL ASSEMBLY (SX-339 only)	
	54	TRANSISTOR ASSEMBLY (SX-339 only)	
	55	REMOTE CONTROL UNIT (CU-SX022),(SX-339 only)	AXD1198

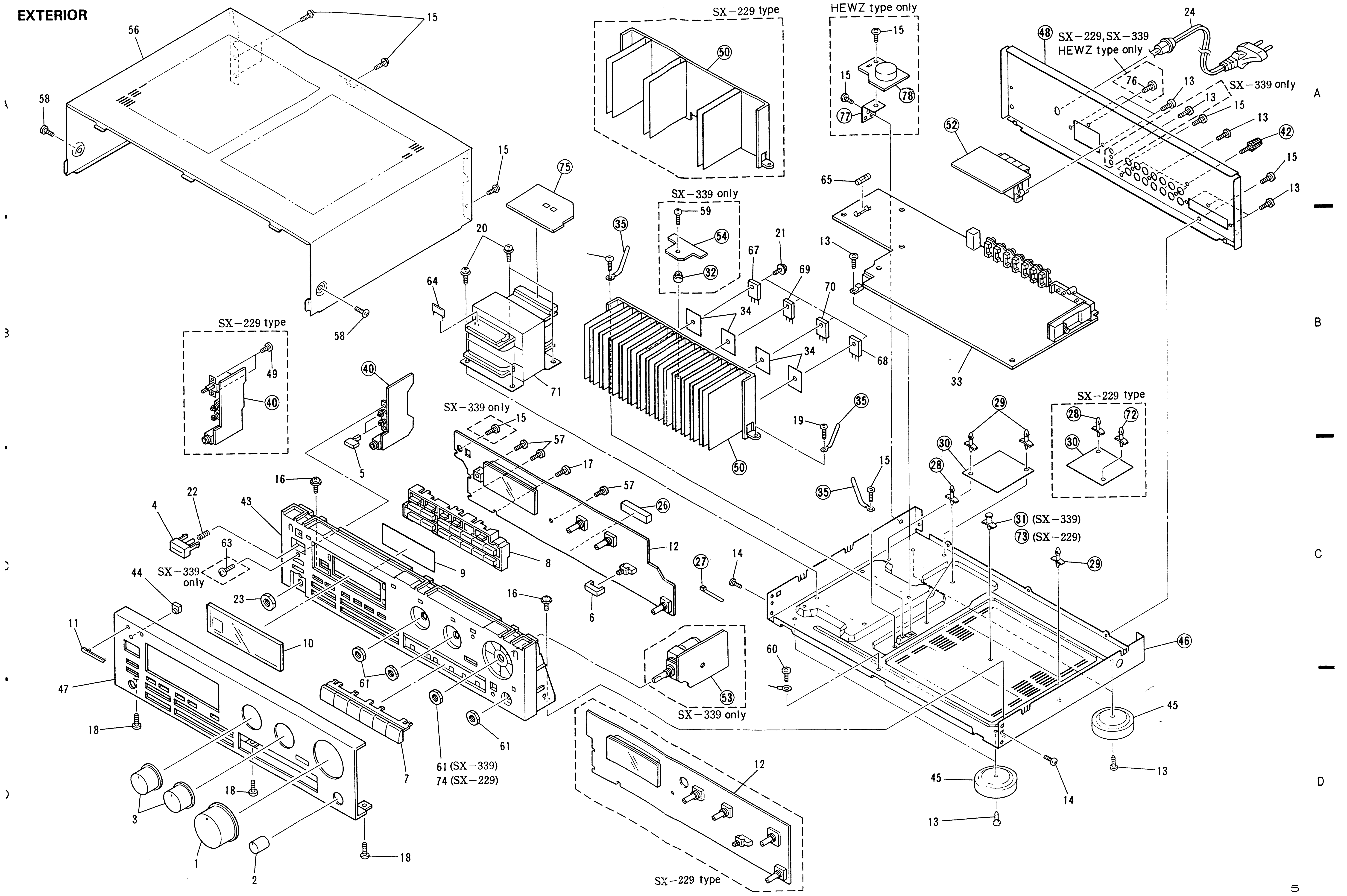
Mark	No.	Description	Parts No.
	56	METAL BONNET	AZN1783
	57	SCREW	BBZ26P080FMC
	58	SCREW	BBZ30P060FZK
	59	SCREW (SX−339 only)	BBZ30P120FZK
	60	SCREW	BDZ30P060FMC
	61	NUT	NK90FUC
	62	BATTERY LID (SX−339 only)	PZN1001
	63	SCREW (SX−339 only)	VMZ30P060FMC
⚠	64	CKA (0.022/AC400V, C1)	ACG1030
⚠	65	FUSE (T2A, FU1) (SX−339)	AEK−511
⚠	65	FUSE (T1A, FU1) (SX−229)	AEK−508
	66	LOOP ANTENNA	ATB1005
⚠	67	TRANSISTOR (Q1) (SX−339)	2SC3181N
⚠	67	TRANSISTOR (Q1) (SX−229)	2SC3180N
⚠	68	TRANSISTOR (Q2) (SX−339)	2SC3181N
⚠	68	TRANSISTOR (Q2) (SX−229)	2SC3180N
⚠	69	TRANSISTOR (Q3) (SX−339)	2SA1264N
⚠	69	TRANSISTOR (Q3) (SX−229)	2SA1263N
⚠	70	TRANSISTOR (Q4) (SX−339)	2SA1264N
⚠	70	TRANSISTOR (Q4) (SX−229)	2SA1263N
⚠	71	POWER TRANSFORMER (T1) (SX−339)	ATS1336
⚠	71	POWER TRANSFORMER (T1) (SX−229)	ATS1337
	72	PCB SUPPORT (SX−229 only)	
	73	PCB SUPPORT (SX−229 only)	
	74	NUT (SX−229 only)	NK70FUC
	75	TRANS ASSEMBLY	
	76	SCREW	ABA1047
	77	PCB HOLDER	
	78	LINE FILTER ASSEMBLY	

PACKING



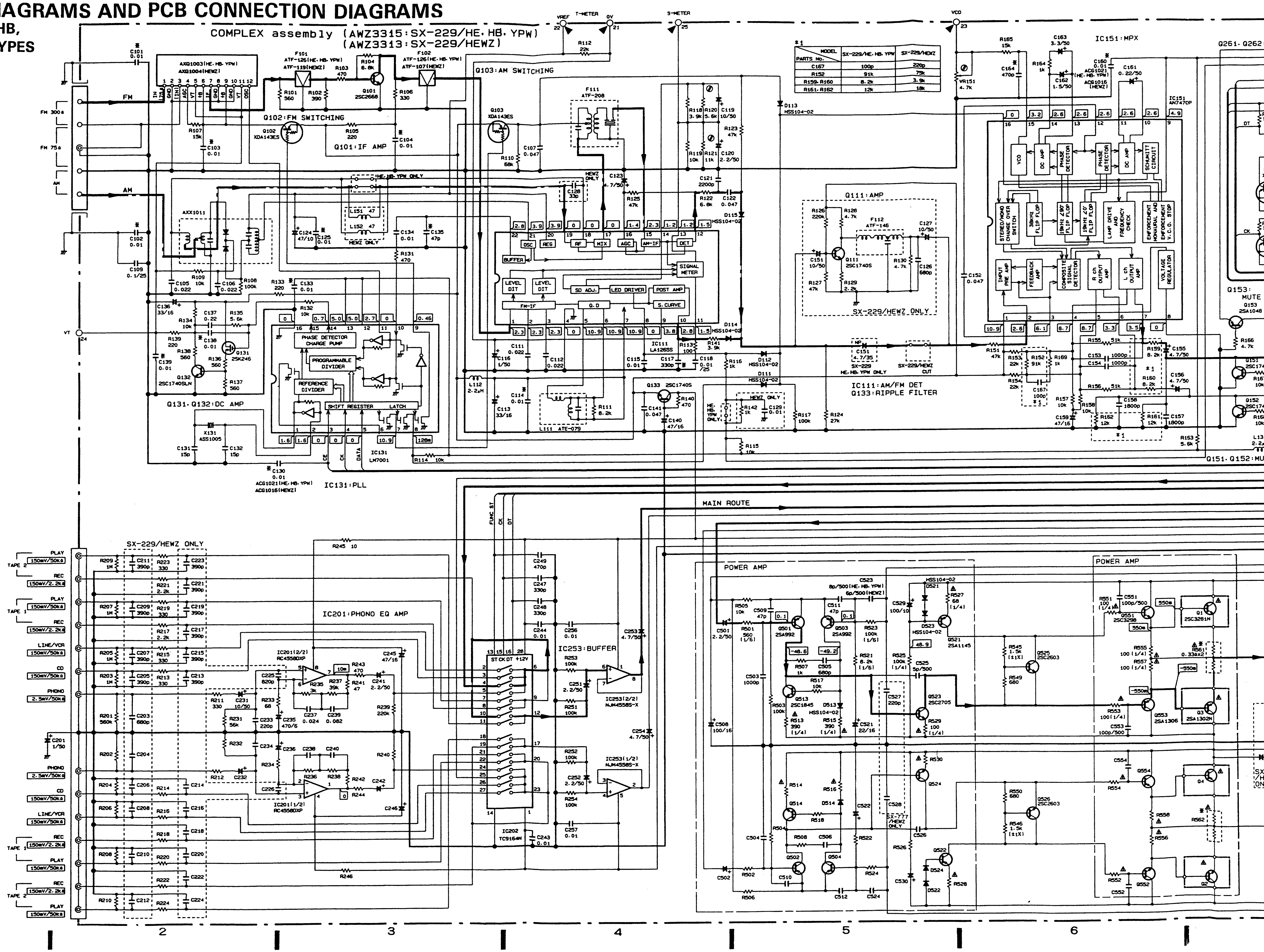


EXTERIOR


SX-229 type
SX-229 type
SX-339 only
SX-339
HEWZ type only
48 SX-229, SX-339
HEWZ type only
SX-339 only
SX-339 only
SX-339 only
61 (SX-339)
74 (SX-229)
SX-339 only
SX-229 type
SX-229 type
31 (SX-339)
73 (SX-229)
A
B
C
D

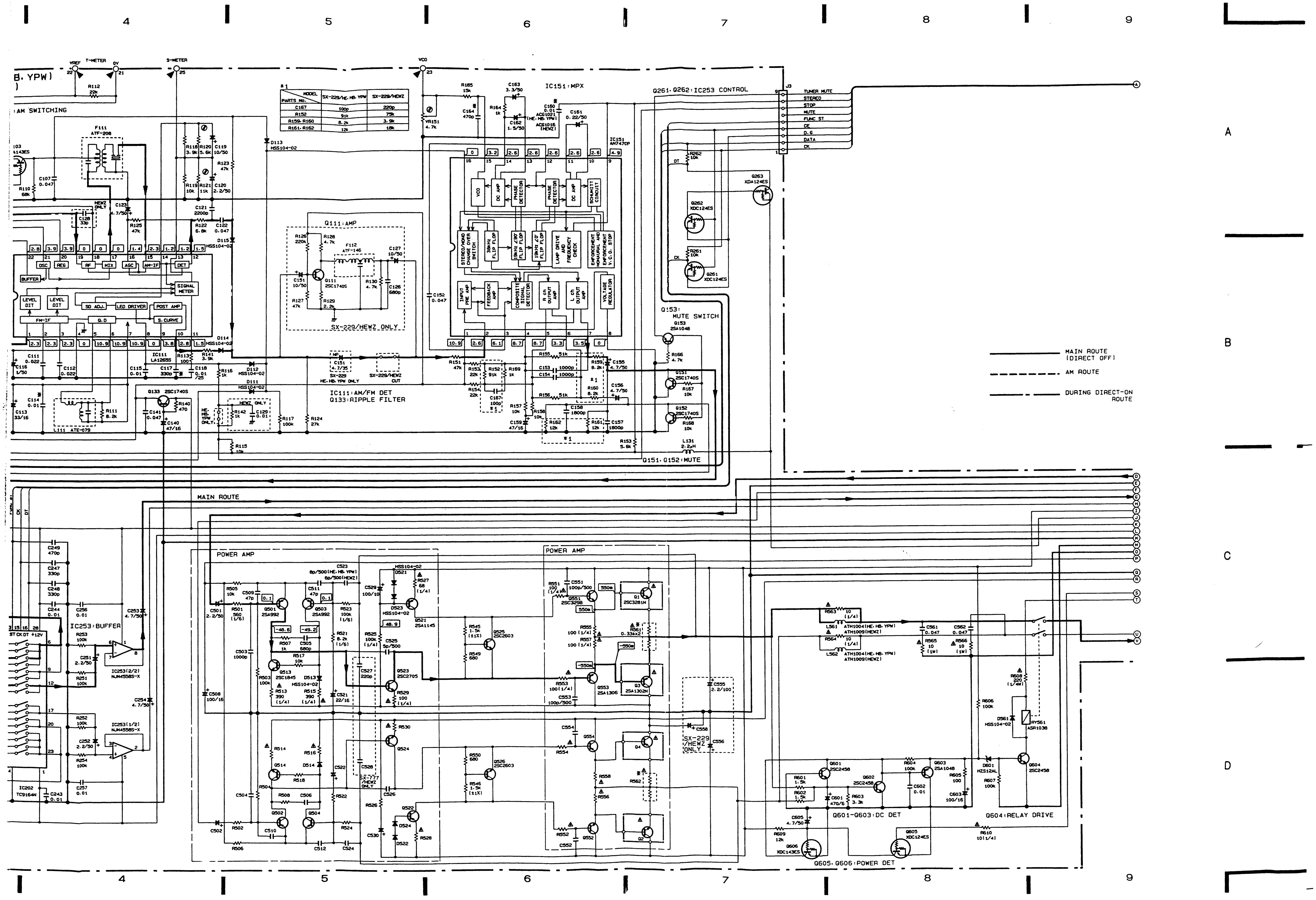
2. SCHEMATIC DIAGRAMS AND PCB CONNECTION DIAGRAMS

2.1 FOR SX－229/HE, HB, YPW AND HEWZ TYPES


1
2
3
4
5
6
A
B
C
D
COMPLEX assembly (AWZ3315:SX-229/HE, HB, YPW)
(AWZ3313:SX-229/HEWZ)
VREF
T-METER
0V
S-METER
VCO
22
21
25
23
FM 300Ω
FM 75Ω
AM
FM
AM
VT
24
AXQ1003(HE, HB, YPW)
AXQ1004(HEWZ)
F101 ATF-126(HE, HB, YPW) ATF-119(HEWZ)
F102 ATF-126(HE, HB, YPW) ATF-107(HEWZ)
Q101 2SC2668
Q101:IF AMP
Q102:FM SWITCHING
Q102 XDA143ES
Q103:AM SWITCHING
Q103 XDA143ES
F111 ATF-208
HEWZ ONLY
AXX1011
HE, HB, YPW ONLY
L151 47
L152 47
HEWZ ONLY
IC131:PLL
IC131 LM7001
PHASE DETECTOR CHARGE PUMP
PROGRAMMABLE DIVIDER
REFERENCE DIVIDER
SHIFT REGISTER
LATCH
X131 ASS1005
Q131 2SK246
Q132 2SC1740SLN
Q131, Q132:DC AMP
C130 0.01 ACG1021(HE, HB, YPW) ACG1016(HEWZ)
CE
CK
DATA
R114 10k
OSC
REG
RF
MIX
AGC
AM-IF
DET
BUFFER
SIGNAL METER
LEVEL DIT
LEVEL DIT
SD ADJ.
LED DRIVER
POST AMP
FM-IF
Q.D
S.CURVE
IC111 LA1265S
L111 ATE-079
Q133 2SC1740S
IC111:AM/FM DET
Q133:RIPPLE FILTER
D111 HSS104-02
D112 HSS104-02
D113 HSS104-02
D114 HSS104-02
D115 HSS104-02
HEWZ ONLY
HE, HB, YPW ONLY
Q111:AMP
F112 ATF-146
Q111 2SC1740S
SX-229/HEWZ ONLY
C151 4.7/35 SX-229 HE, HB, YPW ONLY
SX-229/HEWZ CUT
IC151:MPX
IC151 AN7470P
C160 0.01 ACG1021(HE, HB, YPW) ACG1016(HEWZ)
VCO
DC AMP
PHASE DETECTOR
PHASE DETECTOR
DC AMP
SCHMITT CIRCUIT
STEREO/MONO CHANGE OVER SWITCH
38kHz FLIP FLOP
19kHz 90° FLIP FLOP
19kHz 0° FLIP FLOP
LAMP DRIVE AND FREQUENCY CHECK
ENFORCEMENT MONAURAL AND ENFORCEMENT V.C.O. STOP
INPUT PRE AMP
FEEDBACK AMP
COMPOSITE SIGNAL DETECTOR
R ch OUTPUT AMP
L ch OUTPUT AMP
VOLTAGE REGULATOR
VR151 4.7k
*1
Q153: MUTE
Q153 2SA1048
Q151, Q152:MU
Q261, Q262
MAIN ROUTE
FUNC ST
CK
DT
TAPE 2 PLAY 150mV/50kΩ
REC 150mV/2.2kΩ
TAPE 1 PLAY 150mV/50kΩ
REC 150mV/2.2kΩ
LINE/VCR 150mV/50kΩ
CD 150mV/50kΩ
PHONO 2.5mV/50kΩ
SX-229/HEWZ ONLY
IC201:PHONO EQ AMP
IC201(2/2) RC4558DXP
IC201(1/2) RC4558DXP
R245 10
R246
IC202 TC9164N
ST CK DT +12V
IC253:BUFFER
IC253(2/2) NJM4558S-X
IC253(1/2) NJM4558S-X
POWER AMP
POWER AMP
Q501 2SA992
Q503 2SA992
Q513 2SC1845
D513 HSS104-02
D521 HSS104-02
D523 HSS104-02
Q521 2SA1145
Q523 2SC2705
Q525 2SC2603
Q526 2SC2603
Q551 2SC3298
Q553 2SA1306
Q1 2SC3281N
Q3 2SA1302N
Q2
Q4
SX-777/HEWZ ONLY
0.33x2
6

*1

MODEL / PARTS No.	SX-229/HE, HB, YPW	SX-229/HEWZ
C167	100p	220p
R152	91k	75k
R159, R160	8.2k	3.9k
R161, R162	12k	18k


4
5
6
7
8
9
A
B
C
D
VREF
T-METER
0V
S-METER
VCO
22
21
25
23
B. YPW)
:AM SWITCHING
R112 22k
F111 ATF-208
C107 0.047
R110 68k
D113 HSS104-02
R118 3.9k
R120 5.6k
C119 10/50
R123 47k
R119 10k
R121 11k
C120 2.2/50
C121 2200p
R122 6.8k
C122 0.047
D115 HSS104-02
HEWZ ONLY
C123 4.7/50
C128 33p
R125 47k
OSC
REG
RF
MIX
AGC
AM-IF
DET
BUFFER
SIGNAL METER
LEVEL DIT
SD ADJ.
LED DRIVER
POST AMP
FM-IF
Q.D
S.CURVE
IC111 LA1265S
D114 HSS104-02
R113 100
R141 3.9k
C111 0.022
C112 0.022
C115 0.01
C117 330p
C118 0.01 /25
C116 1/50
C114 0.01
C113 33/16
L111 ATE-079
R111 8.2k
Q133 2SC1740S
R140 470
C141 0.047
C140 47/16
R116 1k
D112 HSS104-02
D111 HSS104-02
HE. HB. YPW ONLY
HEWZ ONLY
R142 1k
C129 0.01
R117 100k
R124 27k
R115 10k
Q111:AMP
R126 220k
R128 4.7k
F112 ATF-146
C127 10/50
C131 10/50
Q111 2SC1740S
R130 4.7k
C126 680p
R127 47k
R129 2.2k
SX-229/HEWZ ONLY
C151 4.7/35
SX-229 HE. HB. YPW ONLY
SX-229/HEWZ CUT
IC111:AM/FM DET
Q133:RIPPLE FILTER
VR151 4.7k
C152 0.047
R165 15k
C164 470p
C163 3.3/50
R164 1k
C162 1.5/50
C160 0.01
ACG1021 (HE. HB. YPW)
ACG1016 (HEWZ)
C161 0.22/50
IC151:MPX
IC151 AN7470P
VCO
DC AMP
PHASE DETECTOR
SCHMITT CIRCUIT
STEREO/MONO CHANGE OVER SWITCH
38kHz FLIP FLOP
19kHz ∠90° FLIP FLOP
19kHz ∠0° FLIP FLOP
LAMP DRIVE AND FREQUENCY CHECK
ENFORCEMENT MONAURAL AND ENFORCEMENT V.C.O. STOP
INPUT PRE AMP
FEEDBACK AMP
COMPOSITE SIGNAL DETECTOR
R ch OUTPUT AMP
L ch OUTPUT AMP
VOLTAGE REGULATOR
R151 47k
R153 22k
R152 91k
R169 1k
R154 22k
C167 100p
R155 51k
C153 1000p
C154 1000p
R156 51k
R159 8.2k
R160 8.2k
C155 4.7/50
C156 4.7/50
R157 10k
R158 10k
C159 47/16
C158 1800p
R162 12k
R161 12k
C157 1800p
R153 5.6k
L131 2.2μH
Q151. Q152:MUTE
Q261. Q262:IC253 CONTROL
J3
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.6
DATA
CK
DT
R262 10k
R261 10k
Q263 XDA124ES
Q262 XDC124ES
Q261 XDC124ES
Q153: MUTE SWITCH
Q153 2SA1048
R166 4.7k
Q151 2SC1740S
R167 10k
Q152 2SC1740S
R168 10k
MAIN ROUTE (DIRECT OFF)
AM ROUTE
DURING DIRECT-ON ROUTE
A
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
MAIN ROUTE
C249 470p
C247 330p
C248 330p
C244 0.01
C256 0.01
R253 100k
C251 2.2/50
R251 100k
IC253:BUFFER
IC253(2/2) NJM4558S-X
C253 4.7/50
C254 4.7/50
R252 100k
C252 2.2/50
R254 100k
IC253(1/2) NJM4558S-X
C257 0.01
IC202 TC9164N
C243 0.01
ST CK DT +12V
POWER AMP
R505 10k
C501 2.2/50
R501 560 (1/6)
C509 47p
Q501 2SA992
C511 47p
Q503 2SA992
C523 8p/500(HE. HB. YPW) 6p/500(HEWZ)
R523 100k (1/6)
R521 8.2k (1/6)
C503 1000p
R507 1k
C505 680p
R517 10k
Q513 2SC1845
D513 HSS104-02
R503 100k
R513 390 (1/4)
R515 390 (1/4)
C521 22/16
C508 100/16
HSS104-02
D521
R527 68 (1/4)
C529 100/10
D523 HSS104-02
Q521 2SA1145
R525 100k (1/4)
C525 50/500
C527 220p
Q523 2SC2705
R529 100 (1/4)
R530
Q524
R514
R516
Q514
D514
R518
C522
C528
SX-777 /HEWZ ONLY
C526
R504
R508
C506
C504
R522
R526
Q502
Q504
C510
R524
Q522
D524
C530
D522
R528
C502
R502
R506
C512
C524
R545 1.5k (±1%)
R549 680
Q525 2SC2603
R550 680
R546 1.5k (±1%)
Q526 2SC2603
R551 100 (1/4)
C551 100p/500
Q551 2SC3298
Q1 2SC3281N
R555 100 (1/4)
R557 100 (1/4)
R561 0.33Ω×2
R553 100 (1/4)
Q553 2SA1306
C553 100p/500
Q3 2SA1302N
C554
Q554
R554
Q4
R558
R556
R562
R552
C552
Q552
Q2
C555 2.2/100
C558
C556
SX-229 /HEWZ ONLY
R563
R564
L561
L562
ATH1004(HE. HB. YPW) ATH1009(HEWZ)
C561 0.047
C562 0.047
R565 10 (1W)
R566 10 (1W)
R608 220 (1/4W)
R606 100k
D561 HSS104-02
RY561 ASR1038
Q601 2SC2458
Q602 2SC2458
Q603 2SA1048
Q604 2SC2458
R601 1.5k
R602 1.5k
C601 470/6
R603 3.3k
R604 100k
C602 0.01
R605 100
C603 100/16
D601 HZS12AL
R607 100k
Q601-Q603:DC DET
Q604:RELAY DRIVE
R609 12k
C605 4.7/50
Q606 XDC143ES
Q605 XDC124ES
R610 10(1/4)
Q605. Q606:POWER DET

*1

MODEL / PARTS No.	SX-229/HE. HB. YPW	SX-229/HEWZ
C167	100p	220p
R152	91k	75k
R159. R160	8.2k	3.9k
R161. R162	12k	18k

- **FOR HE, HB AND YPW TYPES**

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

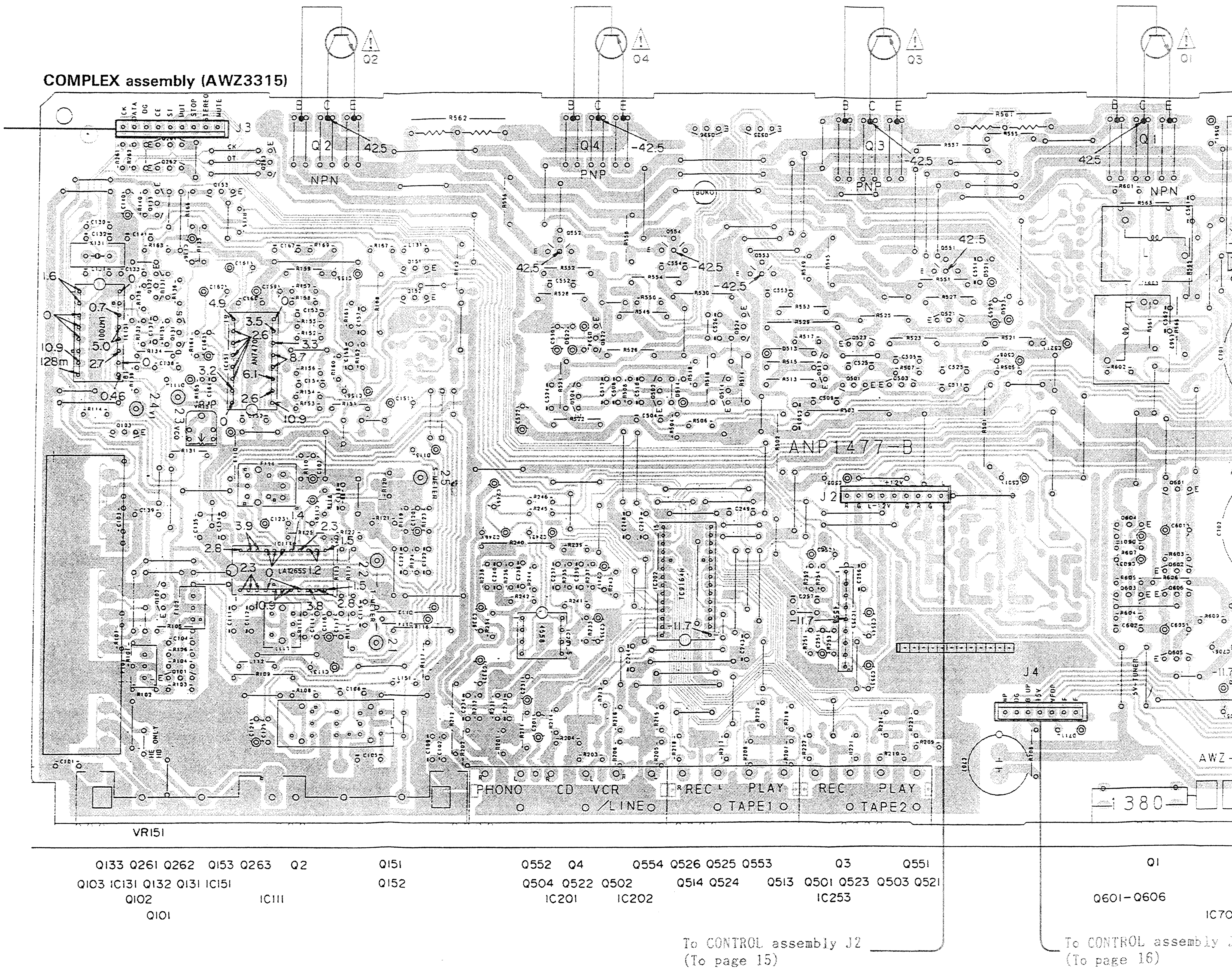
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capector terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side
5. The transistor terminal to which E is affixed shows the emitter.

COMPLEX assembly (AWZ3315)

To CONTROL assembly J3
(To page 16)

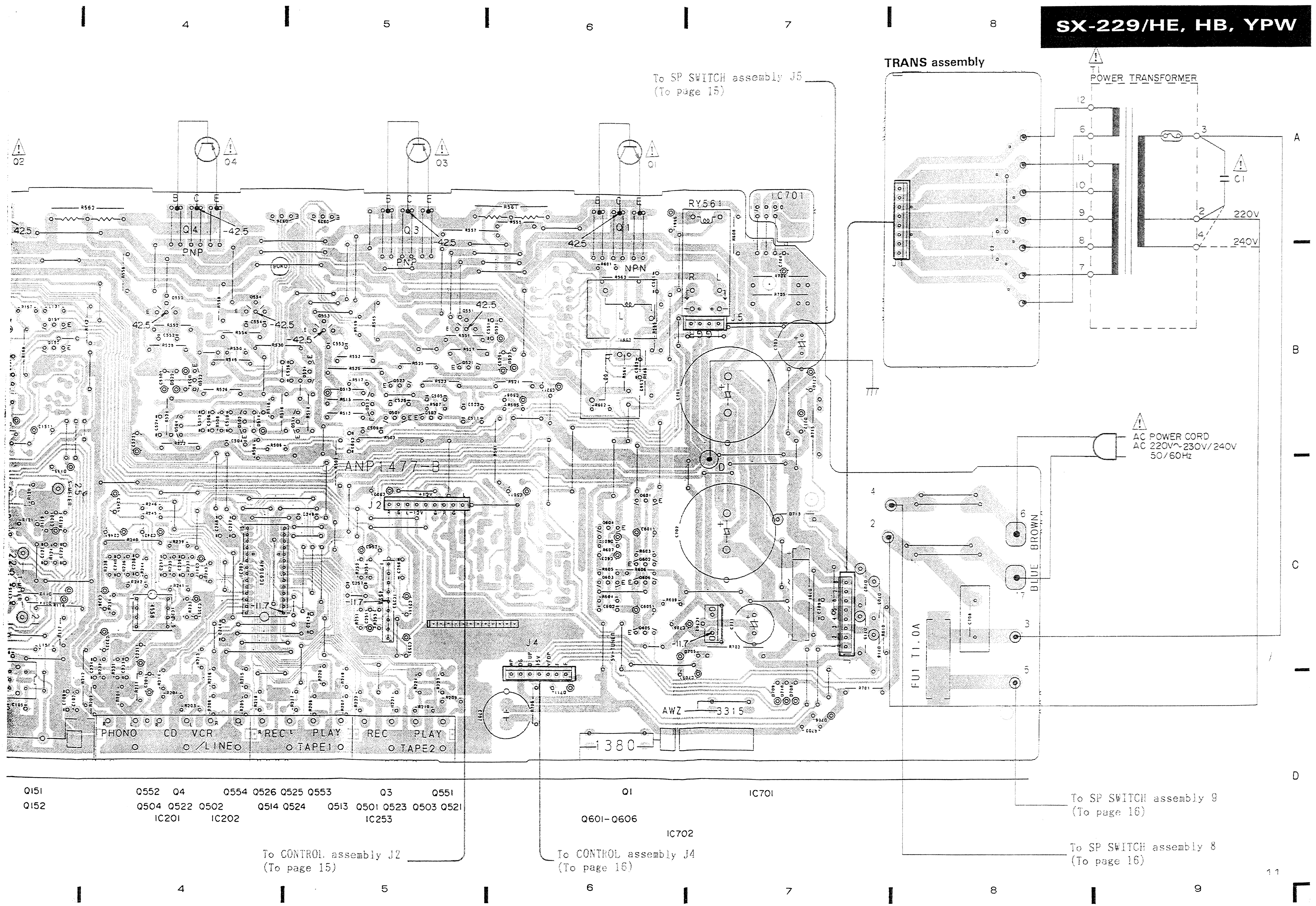


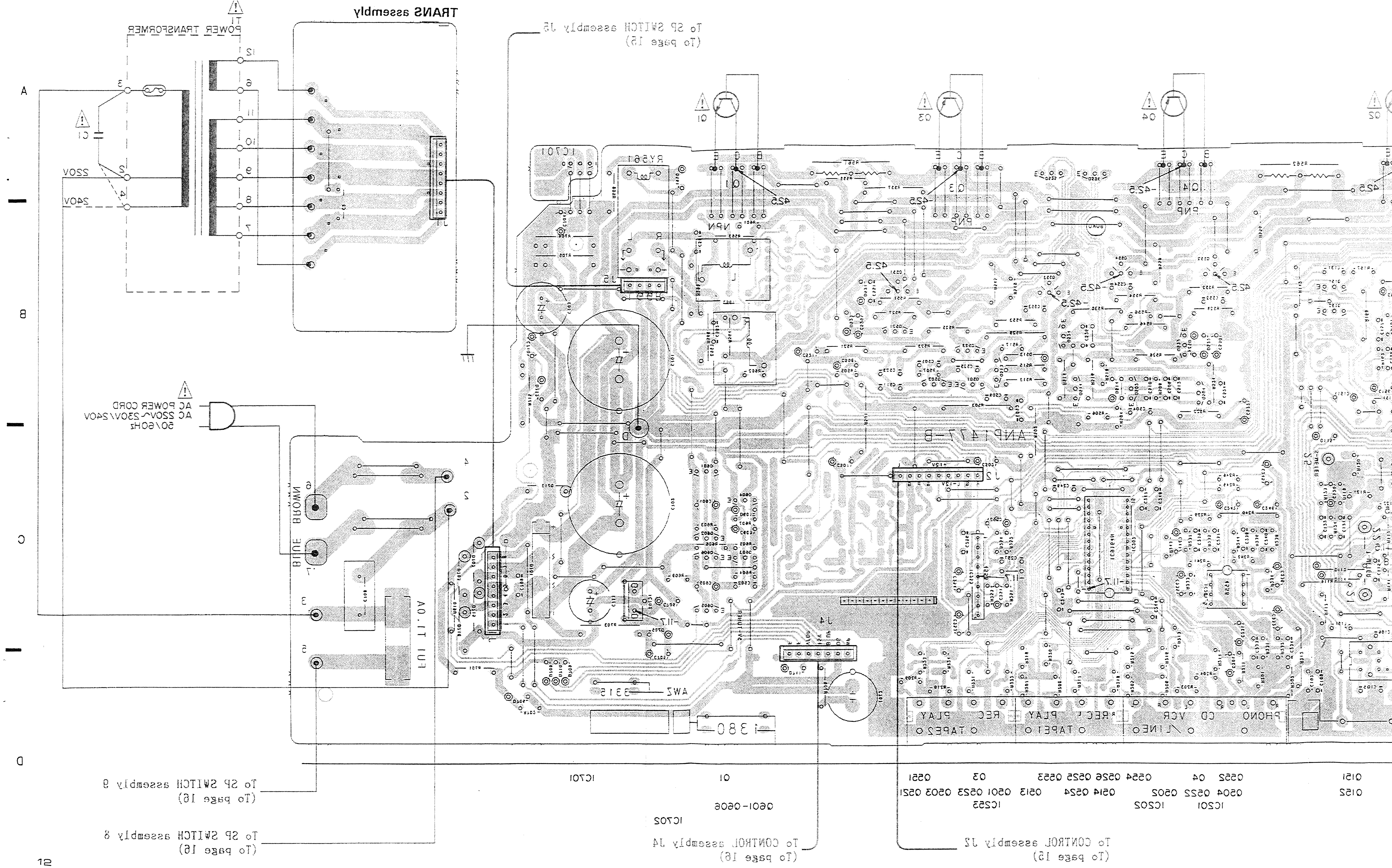
Q2
Q4
Q3
Q1
B C E
J3
CK DATA DG CE SI OUT STOP STEREO MUTE
NPN
PNP
42.5
-42.5
R562
R561
ANP1477-B
J2
J4
LA1265S
AN7410
VR151
VR101
PHONO
CD
VCR /LINE
REC PLAY TAPE1
REC PLAY TAPE2
1380
AWZ
Q133 Q261 Q262 Q153 Q263 Q2
Q103 IC131 Q132 Q131 IC151
Q102
Q101
IC111
Q151
Q152
Q552 Q4
Q504 Q522 Q502
IC201 IC202
Q554 Q526 Q525 Q553
Q514 Q524
Q3
Q513 Q501 Q523
IC253
Q551
Q503 Q521
Q1
Q601–Q606
IC70

To CONTROL assembly J2
(To page 15)

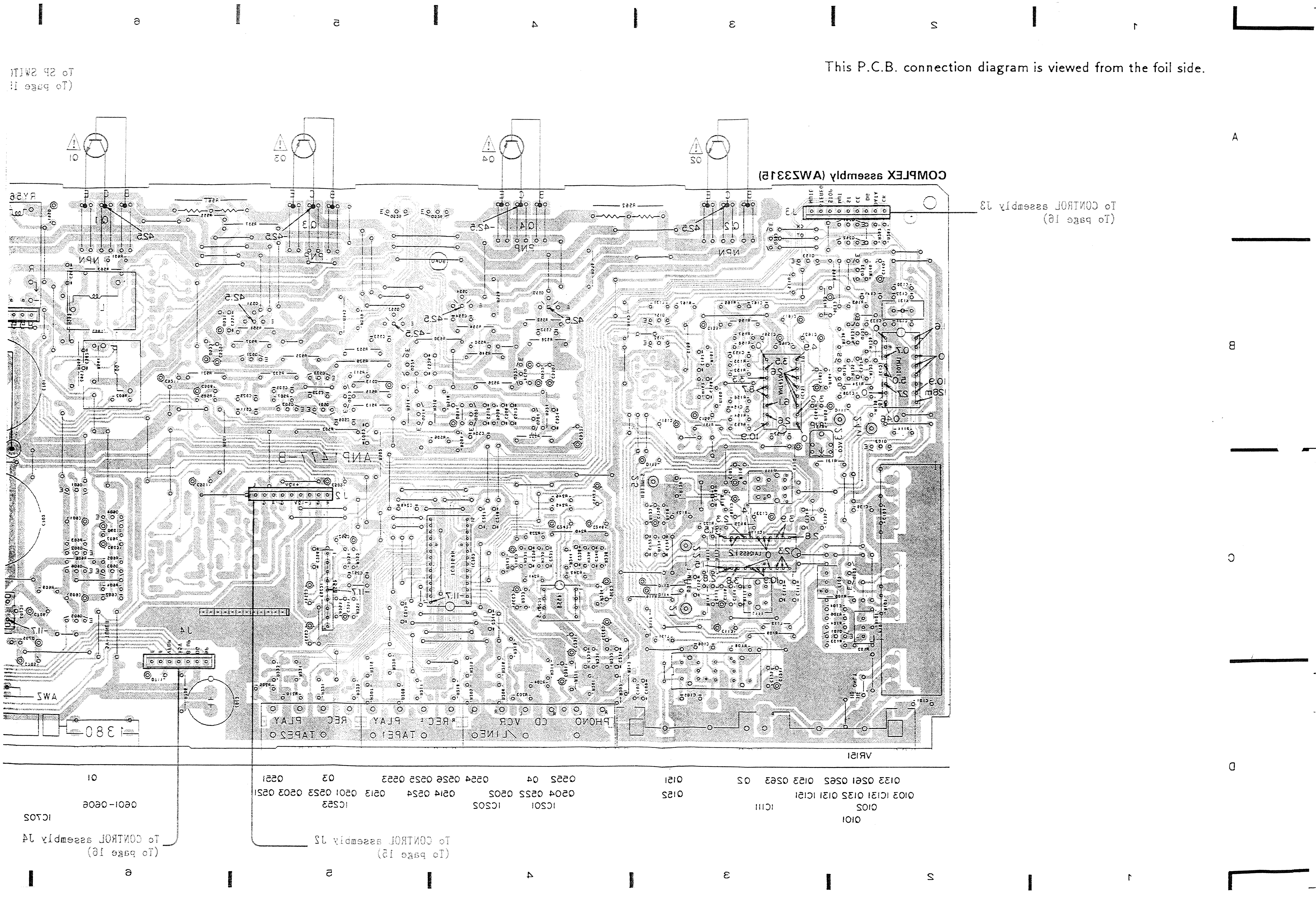
To CONTROL assembly
(To page 16)

To SP
(To pa


4
5
6
7
8
TRANS assembly
T1
POWER TRANSFORMER
To SP SWITCH assembly J5
(To page 15)
Q2
Q4
Q3
Q1
B C E
Q4
PNP
-42.5
42.5
Q3
PNP
Q1
NPN
RY561
IC701
R L
J5
J1
12
6
11
10
9
8
7
3
2
4
220V
240V
C1
A
B
C
D
AC POWER CORD
AC 220V~230V/240V
50/60Hz
ANP1477-B
J2
+12V
L-12V
-11.7
IC9164H
J4
4
2
6
BROWN
BLUE
7
3
5
FU1 T1.0A
AWZ 3315
1380
PHONO
CD
VCR
/LINE
REC
PLAY
TAPE1
REC
PLAY
TAPE2
S-METER
Q151
Q152
Q552
Q504
Q4
Q522
Q502
IC201
Q554
Q526
Q525
Q553
Q514
Q524
IC202
Q513
Q3
Q501
Q523
IC253
Q551
Q503
Q521
Q1
Q601-Q606
IC701
IC702
To CONTROL assembly J2
(To page 15)
To CONTROL assembly J4
(To page 16)
To SP SWITCH assembly 9
(To page 16)
To SP SWITCH assembly 8
(To page 16)
4
5
6
7
8
9


TRANS assembly
T1 POWER TRANSFORMER
220V
240V
C1
AC POWER CORD
AC 220V~230V/240V
50/60Hz
BROWN
BLUE
To SP SWITCH assembly J5
(To page 15)
Q1
Q3
Q4
Q2
NPN
PNP
RY561
IC701
J5
J2
J4
ANP1417-B
PHONO
CD
VCR
LINE
REC
PLAY
TAPE1
TAPE2
IC701
Q1
Q601-Q606
IC702
Q551 Q3 Q553 Q525 Q526 Q554 Q552 Q4
Q521 Q503 Q523 Q501 Q513 Q524 Q514 Q502 Q522 Q504
IC253 IC202 IC201
Q151
Q152
To SP SWITCH assembly 9
(To page 16)
To SP SWITCH assembly 8
(To page 16)
To CONTROL assembly J4
(To page 16)
To CONTROL assembly J2
(To page 15)
A
B
C
D
9
8
7
6
5
4

This P.C.B. connection diagram is viewed from the foil side.


6
5
4
3
2
1
A
B
C
D
COMPLEX assembly (AWZ3315)
To SP SWIT
(To page 11)
Q1
Q5
Q4
Q2
NPN
PNP
42.5
-42.5
J3
To CONTROL assembly J3
(To page 16)
J2
J4
AMP1477-B
LA6555
+12V
-11.7
PHONO
CD
VCR
LINE
TAPE1
PLAY
REC
TAPE2
VR151
AWZ
1380
Q1
0601-0606
IC702
Q551
Q3
Q553
Q525
Q526
Q554
Q4
Q552
Q151
Q2
Q263
Q153
Q262
Q261
Q133
Q521
Q503
Q523
Q501
Q513
Q524
Q514
Q502
Q522
Q504
Q152
IC151
IC131
Q132
Q131
Q103
IC253
IC202
IC201
IC111
Q102
Q101
To CONTROL assembly J4
(To page 16)
To CONTROL assembly J2
(To page 15)

NOTE

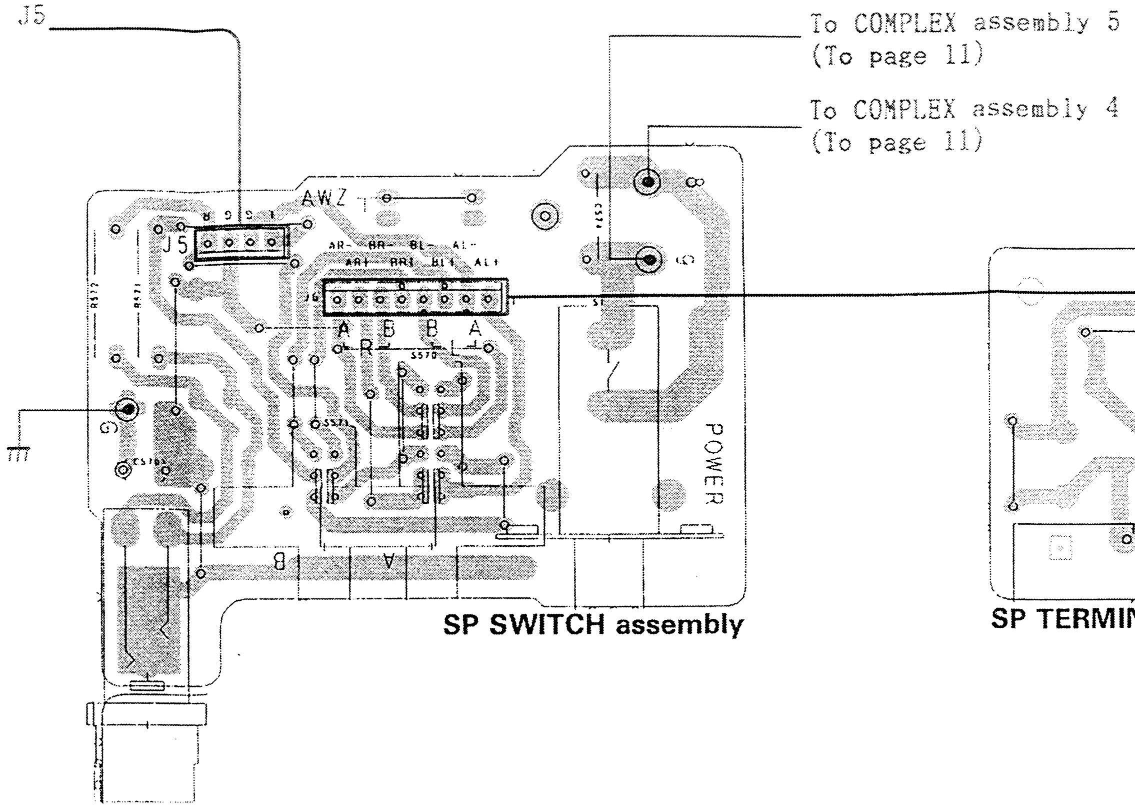
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E Q504	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎ (double circles) shows negatine termianl.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

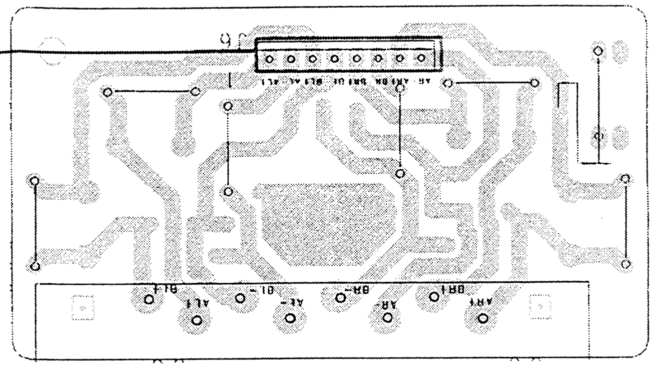

AWZ
J5
POWER
A B B A
R L

To COMPLEX assembly J5
(To page 11)

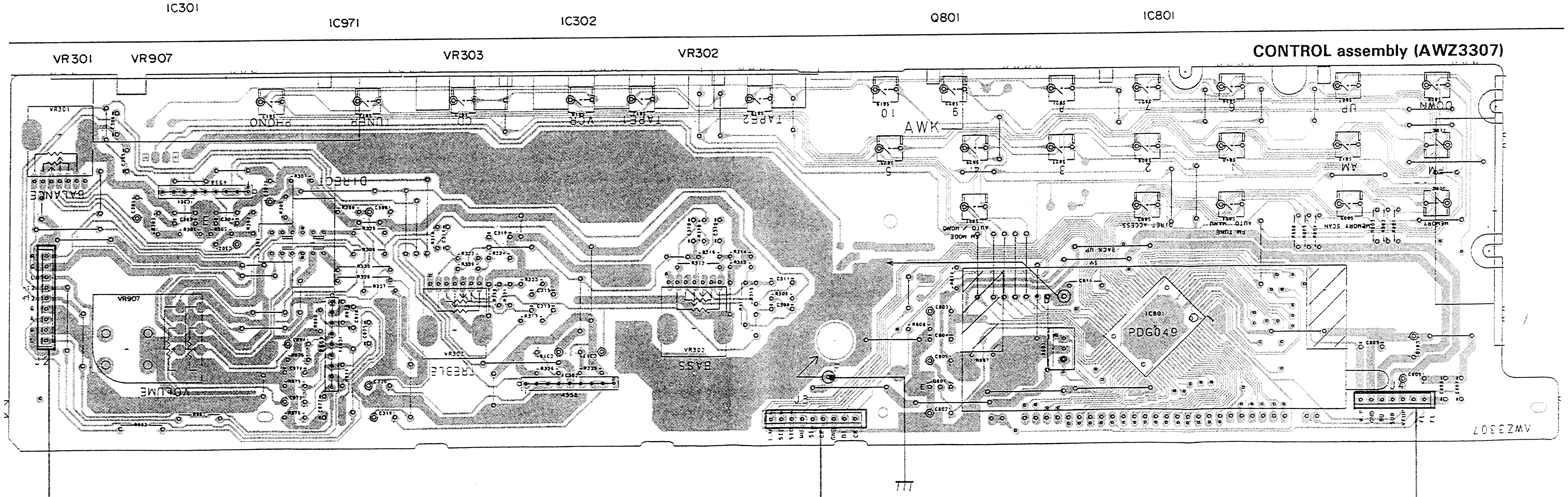
To COMPLEX assembly 5
(To page 11)

To COMPLEX assembly 4
(To page 11)

SP SWITCH assembly



SP TERMINAL assembly

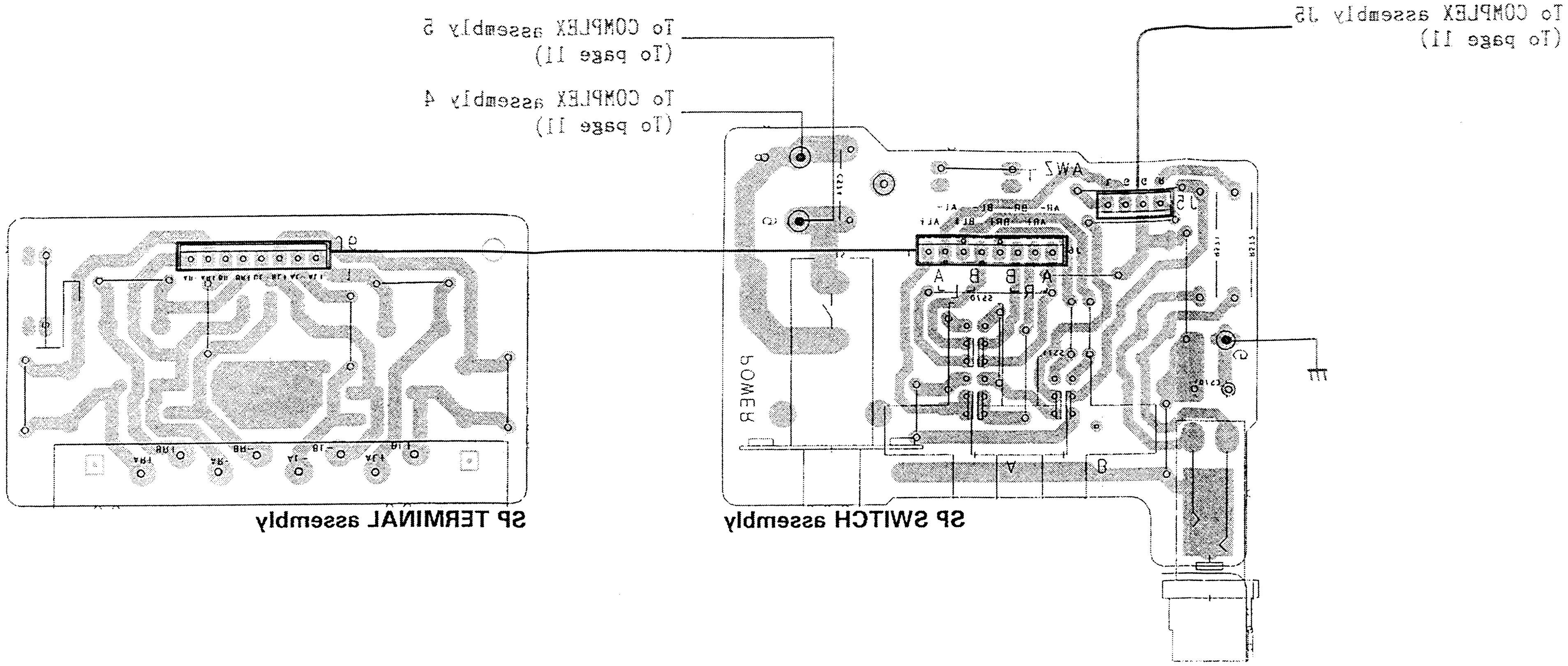

IC301
IC971
IC302
Q801
IC801
VR301
VR907
VR303
VR302
PHONO
TUNER
CD
VCR
TAPE1
TAPE2
AWK
BALANCE
DIRECT
VOLUME
TREBLE
BASS
UP
DOWN
AM
FM
MEMORY
PDG049
J2
J3
J4
AWZ3307

CONTROL assembly (AWZ3307)

To COMPLEX assembly J2
(To page 10)

To COMPLEX assembly J3
(To page 9)

To COMPLEX assembly J4
(To page 10)



To COMPLEX assembly 5
(To page 11)

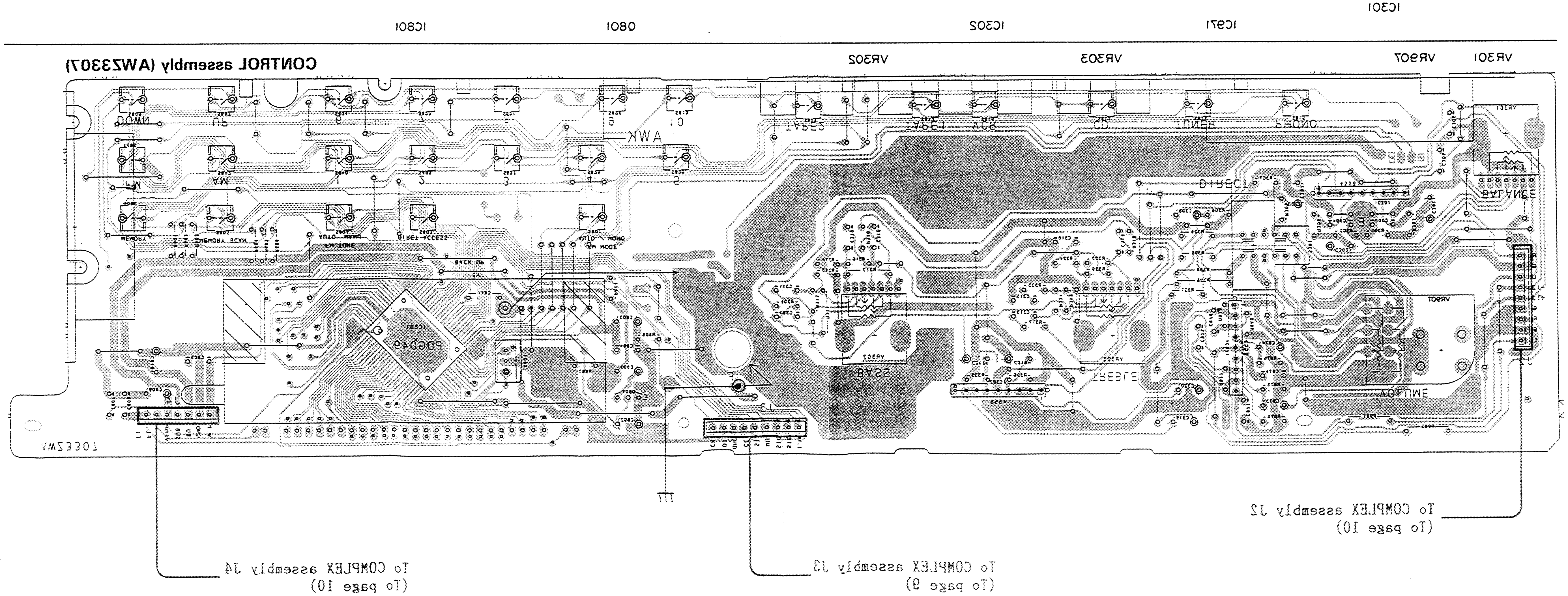
To COMPLEX assembly 4
(To page 11)

To COMPLEX assembly J5
(To page 11)

SP TERMINAL assembly

SP SWITCH assembly

POWER
AWZ
J5



CONTROL assembly (AWZ3307)

To COMPLEX assembly J2
(To page 10)

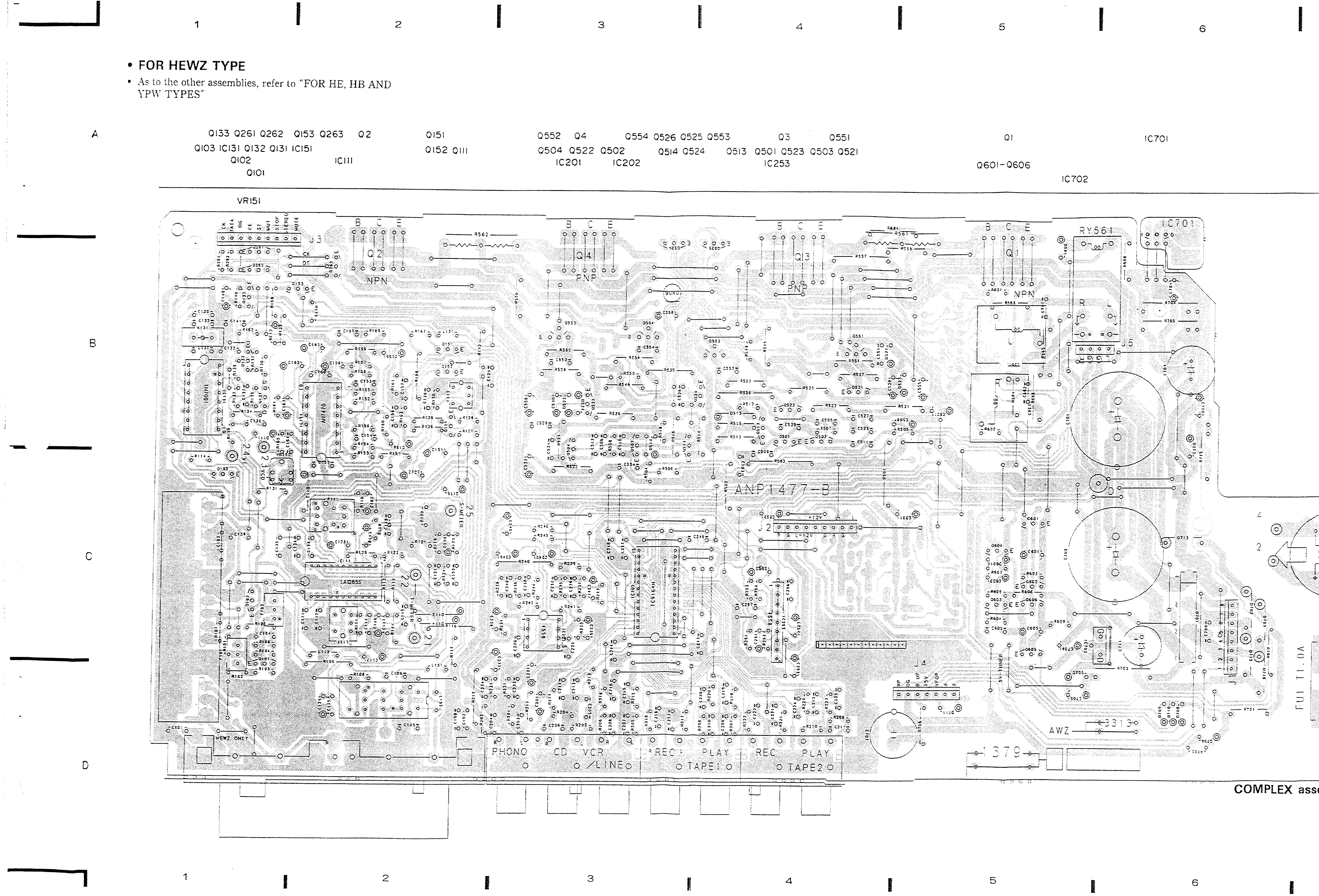
To COMPLEX assembly J4
(To page 10)

To COMPLEX assembly J3
(To page 9)

IC801
Q801
IC302
IC971
IC301
VR302
VR303
VR907
VR301
AWK
DOWN
UP
MEMORY
DIRECT
BALANCE
BASS
TREBLE
VOLUME
PD6049
AWZ3307

• FOR HEWZ TYPE

- As to the other assemblies, refer to "FOR HE, HB AND YPW TYPES"


1
2
3
4
5
6
A
B
C
D
Q133 Q261 Q262 Q153 Q263 Q2
Q103 IC131 Q132 Q131 IC151
Q102
Q101
IC111
Q151
Q152 Q111
Q552 Q4
Q504 Q522 Q502
IC201 IC202
Q554 Q526 Q525 Q553
Q514 Q524
Q3 Q551
Q513 Q501 Q523 Q503 Q521
IC253
Q1
Q601–Q606
IC701
IC702
VR151
J3
CK
DATA
DG
CE
ST
MUT
STOP
STEREO
MUTE
B C E
Q2
NPN
Q4
PNP
Q3
PNP
Q1
NPN
RY561
IC701
AN7470
LA1265S
ANP1477-B
J2
+12V
J4
J5
PHONO
CD
VCR
/LINE
REC
PLAY
TAPE1
TAPE2
HEWZ ONLY
AWZ
1379
3313
FU1 T1.0A
24
23
25
22
21

COMPLEX ass

NOTE

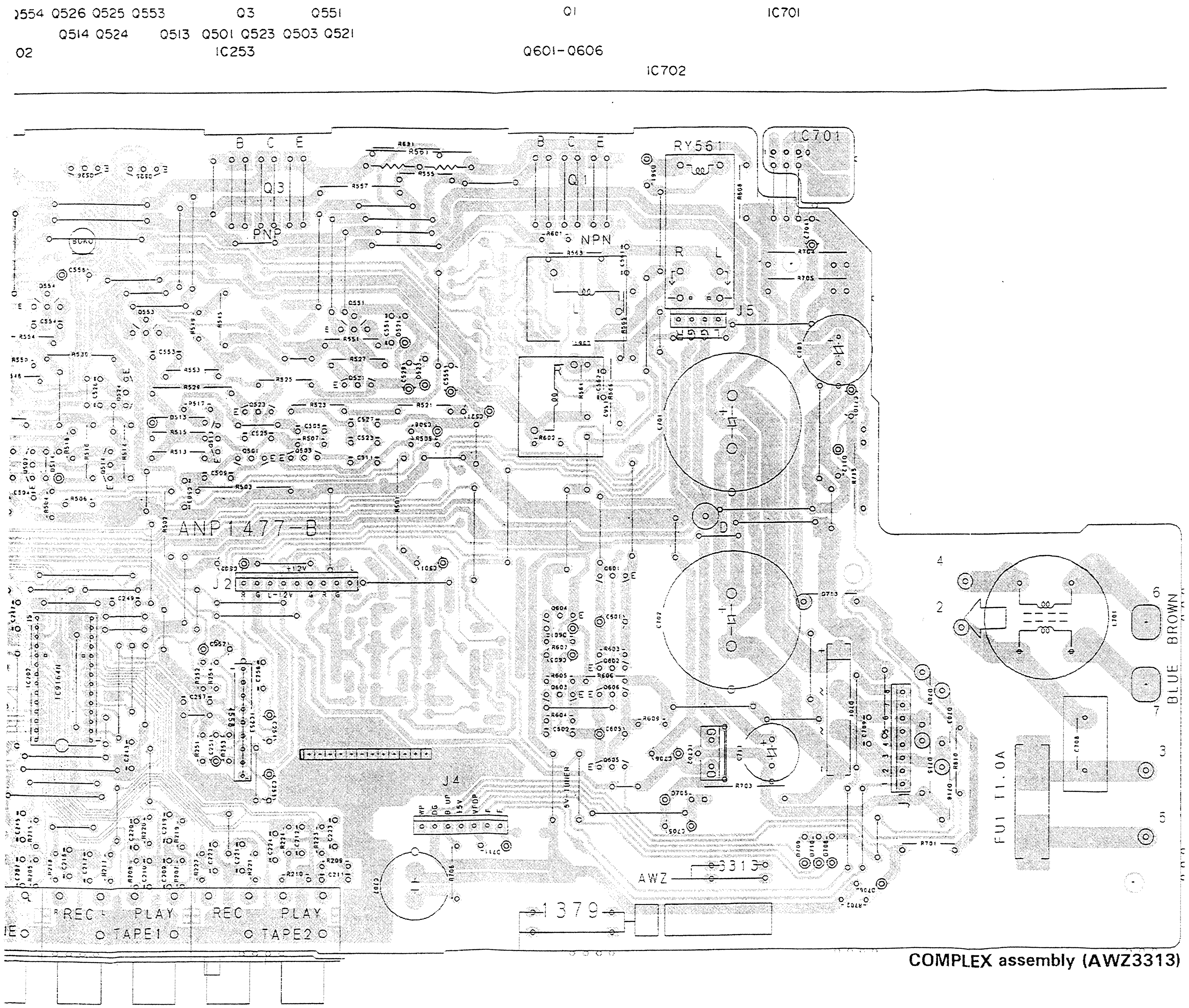
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E○ ○ ○	E○ ○ ○ or E○ ○ ○	Transistor
Q215 ○ ○ ○	○ ○ ○ or ○ ○ ○	Radiator type transistor
◎ D203 ○	D203 ○—▶|—○	Diode
○ R237 ○	R237 ○—⩘⩘—○	Resistor
◎ C513 ○	○—‖—○ +	Capacitor (Polarity)
○ C518 ○	○—‖—○	Capacitor (Non-polarity)

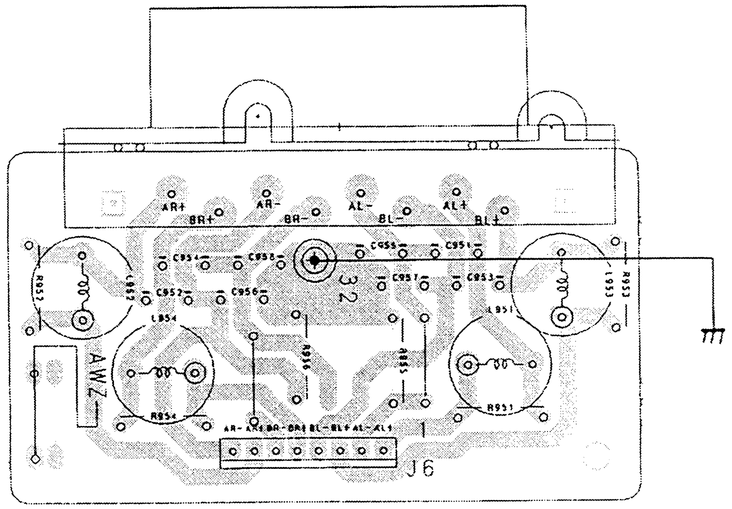
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

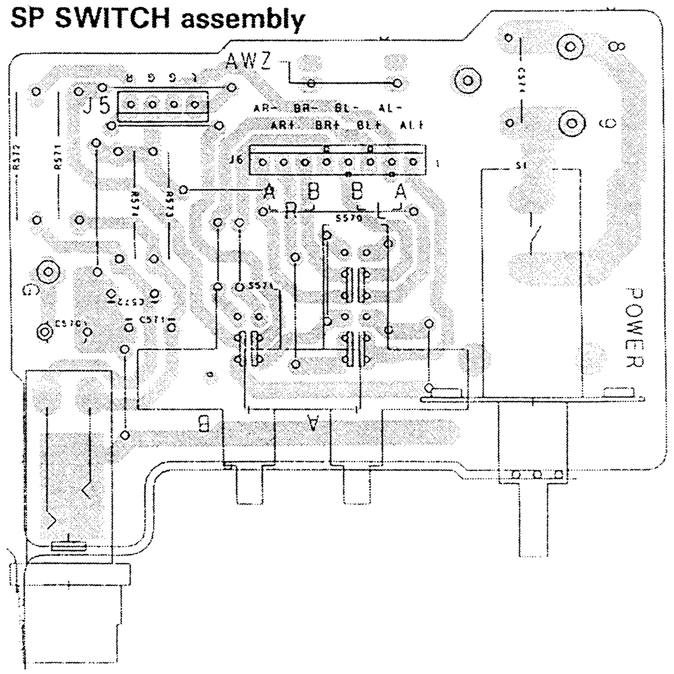
3. The capactor terminal marked with ◎ (double circles) shows negatine termianl.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


Q554 Q526 Q525 Q553
Q514 Q524
Q513 Q501 Q523 Q503 Q521
Q2
Q3
Q551
IC253
Q1
Q601-Q606
IC701
IC702
Q13
PNP
Q1
NPN
RY561
IC701
J5
ANP1477-B
J2
J4
AWZ
3313
1379
BLUE
BROWN
FU1 T1.0A
REC
PLAY
TAPE1
REC
PLAY
TAPE2

COMPLEX assembly (AWZ3313)


AR+
BR+
AR-
BR-
AL-
BL-
AL+
BL+
AWZ
J6

SP TERMINAL assembly


AWZ
J5
J6
AR- BR- BL- AL-
AR+ BR+ BL+ AL+
A B B A
B
A
POWER

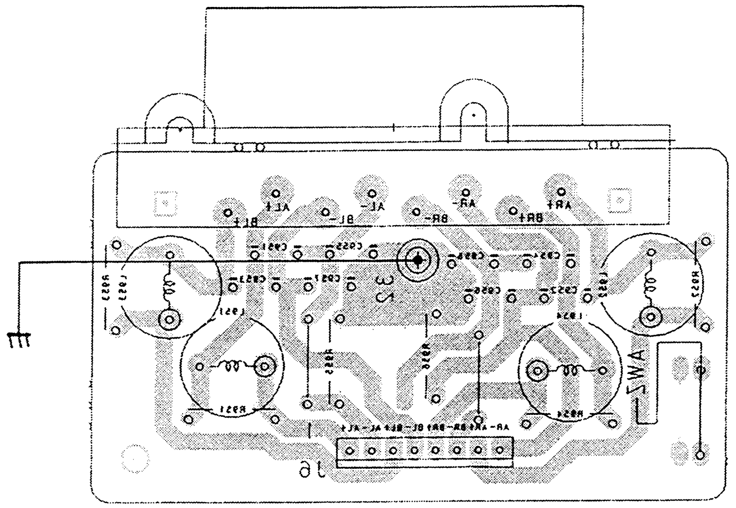
SP SWITCH assembly

9
8
7
6
5
4
A
B
C
D

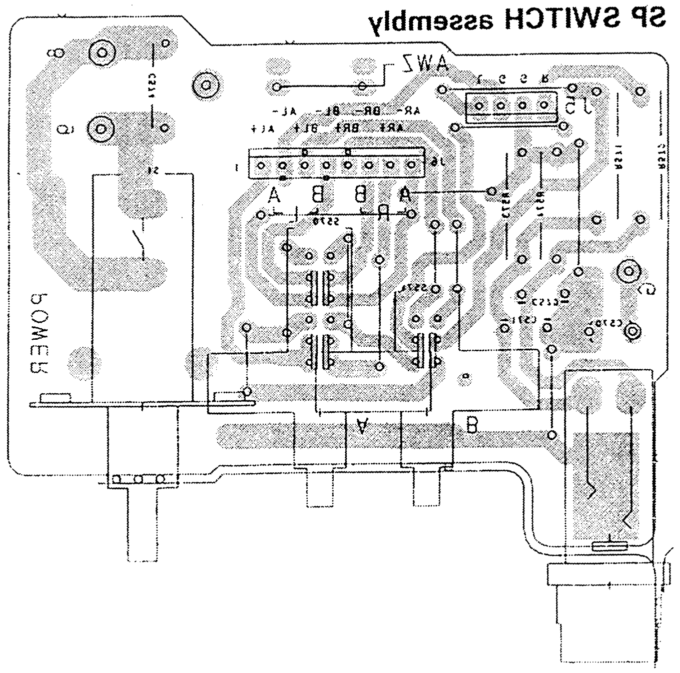
IC701 Q1 Q551 Q3 Q553 Q525 Q526 Q554

Q601-Q606 Q521 Q503 Q523 Q501 Q513 Q524 Q514

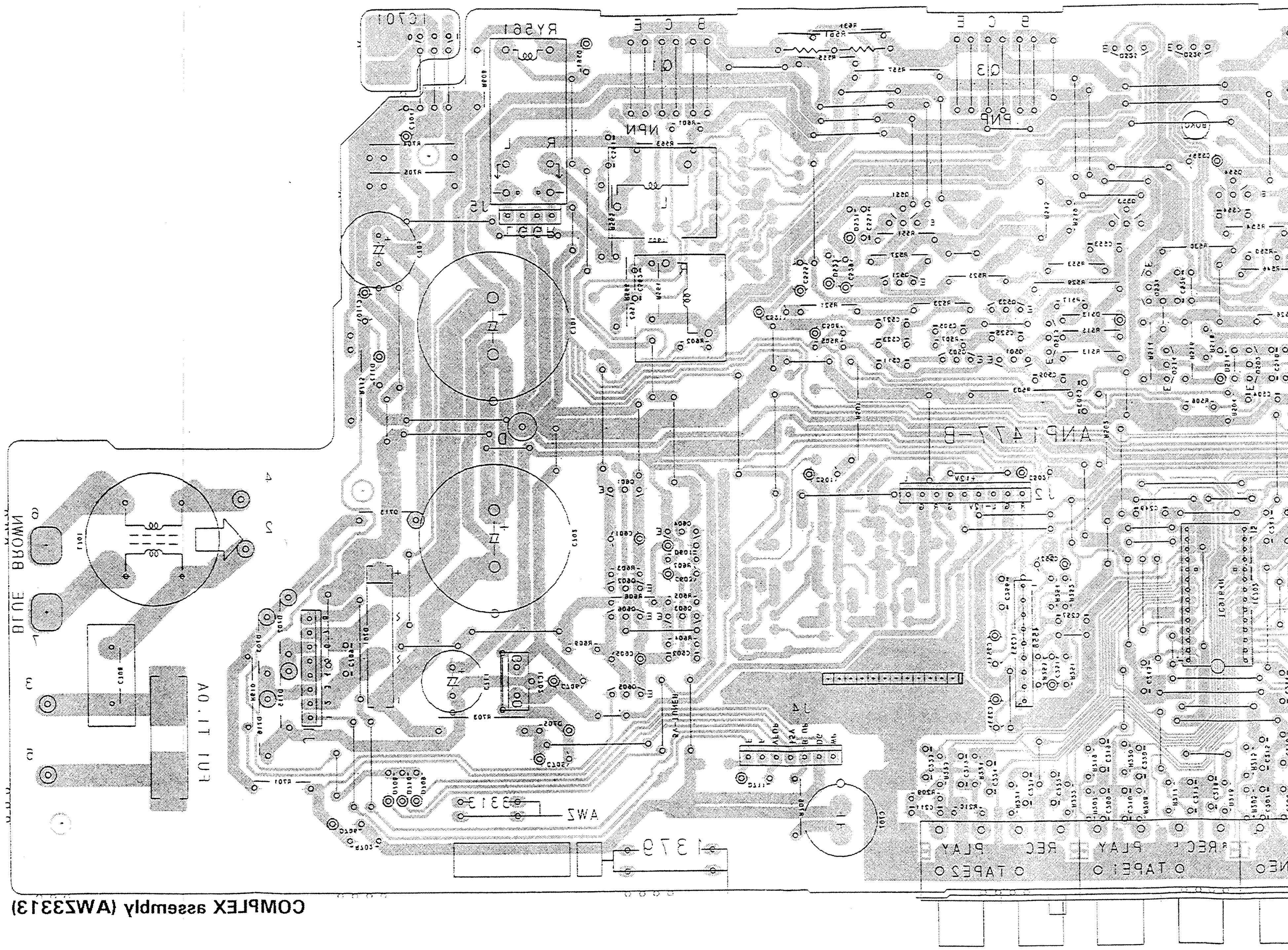
IC702 IC253 IC202



SP TERMINAL assembly


AWZ
J6
J5
A
B
POWER

SP SWITCH assembly


IC701
RY561
NPN
PNP
Q3
J5
ANP1477-B
J2
J4
T1
BLUE
BROWN
AWZ
3313
1379
PLAY
REC
TAPE1
TAPE2

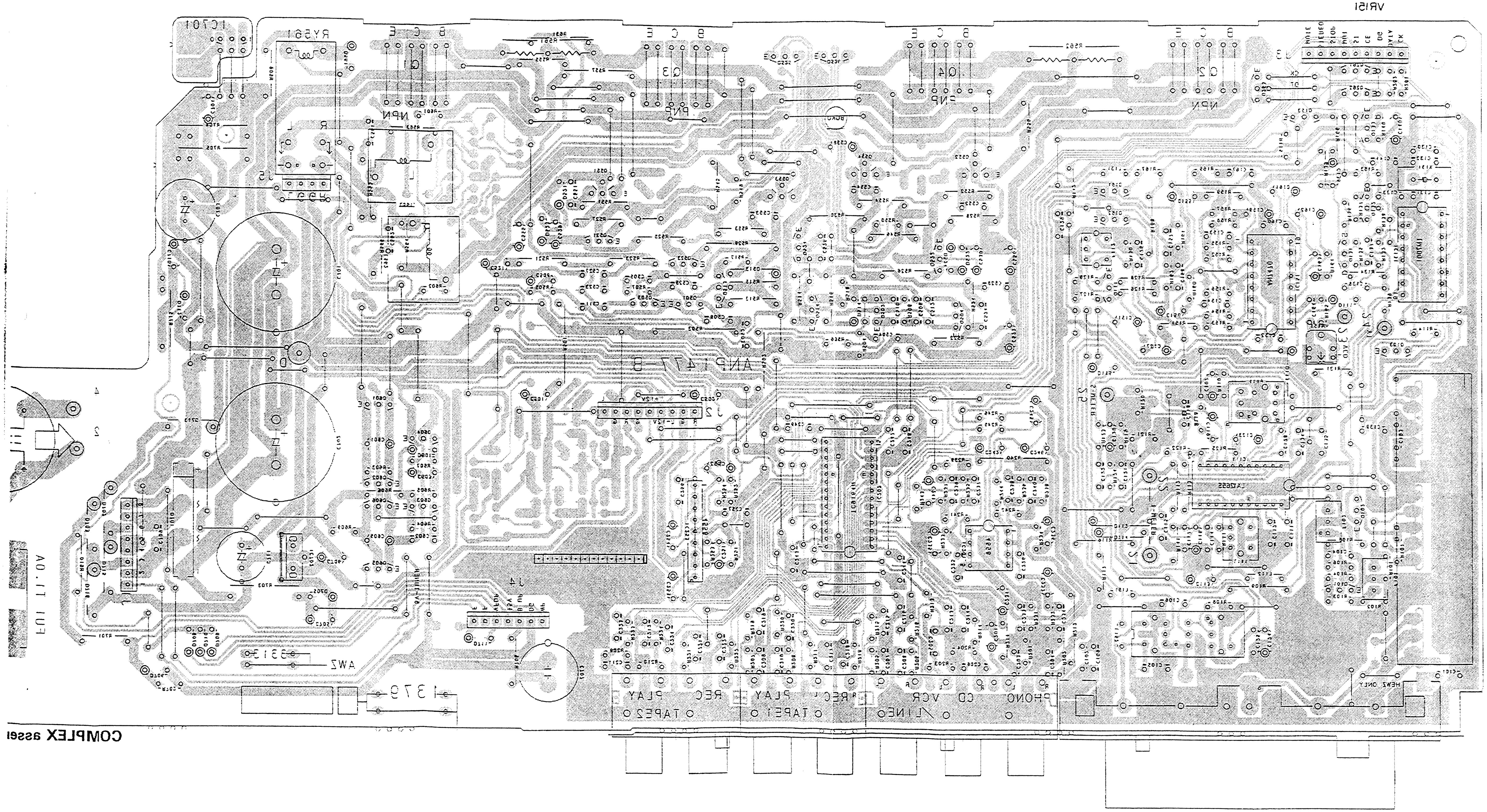
COMPLEX assembly (AWZ3313)

• **FOR HEWZ TYPE**

• As to the other assemblies, refer to "FOR HE, HB AND YPW TYPES"

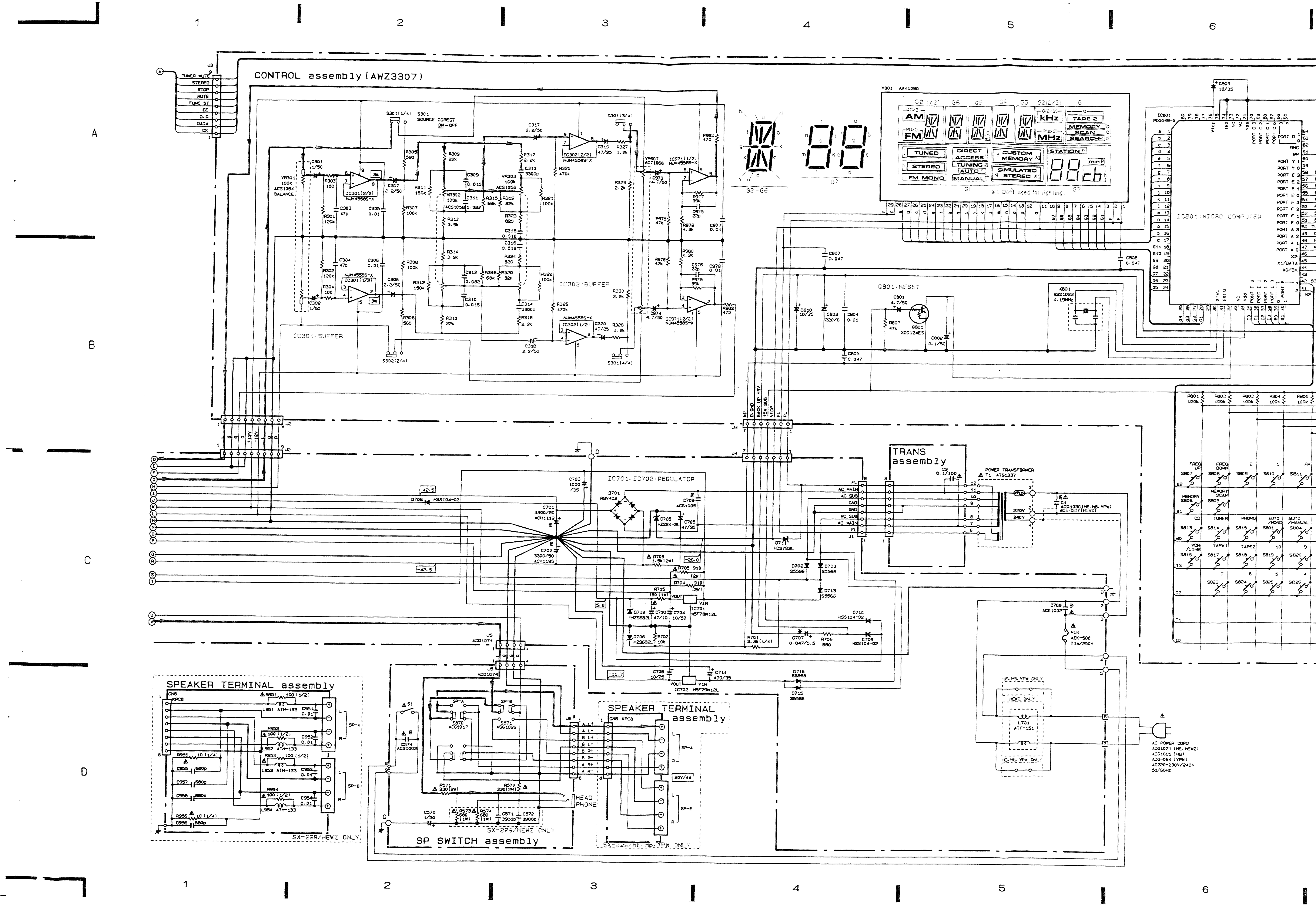
1	2	3	4	5	6
Q133 Q261 Q262 Q153 Q263 Q103 IC131 Q132 Q131 IC151 Q102 Q101	Q2 Q151 Q152 Q111 IC111	Q552 Q4 Q554 Q526 Q525 Q553 Q504 Q522 Q502 Q514 Q524 IC201 IC202	Q3 Q551 Q513 Q501 Q523 Q503 Q521 IC253	Q1 Q601–Q606	IC701 IC702

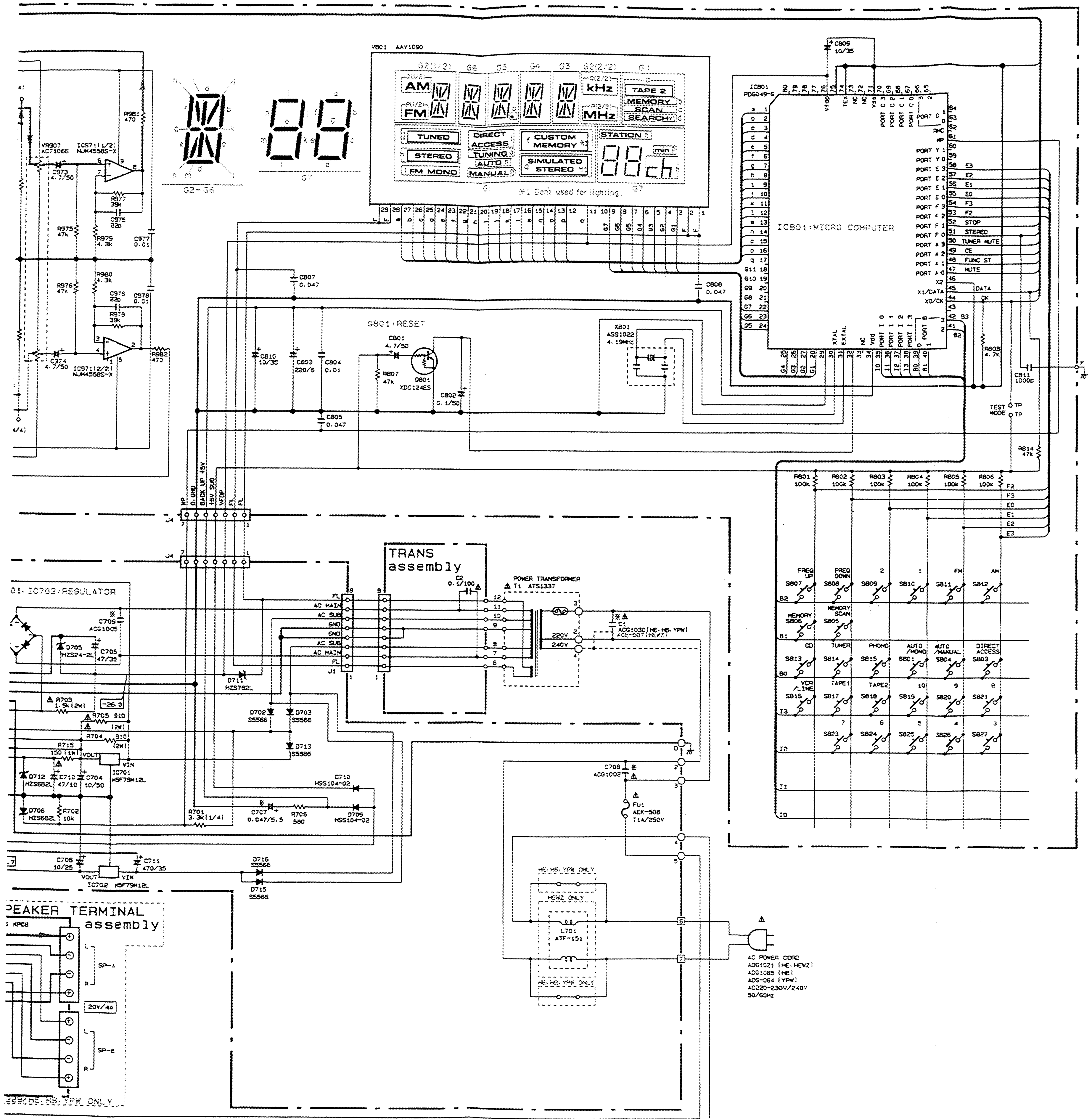
VR151



A
B
C
D
1
2
3
4
5
6
IC701
RY561
Q1
NPN
Q3
PNP
Q4
PNP
Q2
NPN
ANP1477-B
J2
J4
J3
AWZ
PHONO
CD
VCR
LINE
REC
PLAY
TAPE1
REC
PLAY
TAPE2
HEWZ ONLY

COMPLEX assem


CONTROL assembly (AWZ3307)
J3
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.G
DATA
CK
S301 SOURCE DIRECT ON - OFF
S301(1/4)
S301(3/4)
S301(4/4)
S302(2/4)
VR301 100k ACS1054 BALANCE
VR302 100k ACS1058
VR303 100k ACS1058
VR907 ACT1066
IC301(2/2) NJM4558S-X
IC301(1/2) NJM4558S-X
IC302(2/2) NJM4558S-X
IC302(1/2) NJM4558S-X
IC971(1/2) NJM4558S-X
IC971(2/2) NJM4558S-X
IC301: BUFFER
IC302: BUFFER
V801 AAY1090
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
STEREO
FM MONO
DIRECT ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY
SIMULATED STEREO
STATION
min
ch
*1 Don't used for lighting.
G2(1/2)
G6
G5
G4
G3
G2(2/2)
G1
G7
G2~G6
IC801 PDG049-G
IC801: MICRO COMPUTER
C809 10/35
Q801: RESET
Q801 XDC124ES
X801 ASS1022 4.19MHz
TRANS assembly
POWER TRANSFORMER T1 ATS1337
220V
240V
C1 ACG1030 (HE, HB, YPW) ACE-007 (HEWZ)
IC701, IC702: REGULATOR
D701 RBV402
D705 HZS24-2
D711 HZS7B2L
IC701 M5F78M12L
IC702 M5F79M12L
D712 HZS6B2L
D706 HZS6B2L
D708 HSS104-02
D710 HSS104-02
D709 HSS104-02
D702 S5566
D703 S5566
D713 S5566
D716 S5566
D715 S5566
C701 3300/50 ACH1119
C702 3300/50 ACH1195
C708 ACG1002
FU1 AEK-508 T1A/250V
HE, HB, YPW ONLY
HEWZ ONLY
L701 ATF-151
AC POWER CORD
ADG1021 (HE, HEWZ)
ADG1085 (HB)
ADG-064 (YPW)
AC220-230V/240V
50/60Hz
42.5
-42.5
-26.0
5.8
-11.7
20V/4Ω
J1
J2
J4
J5
J6
ADD1074
SPEAKER TERMINAL assembly
CN6 KPC8
L951 ATH-133
L952 ATH-133
L953 ATH-133
L954 ATH-133
SP-A
SP-B
SX-229/HEWZ ONLY
SP SWITCH assembly
S570 ACS1017
S571 ASG1026
C574 ACG1002
HEAD PHONE
SX-229/HEWZ ONLY
SX-229/HE, HB, YPW ONLY
FREQ UP
FREQ DOWN
MEMORY SCAN
CD
TUNER
PHONO
AUTO /MONO
AUTO /MANUAL
VCR /LINE
TAPE1
TAPE2
1
2
3
4
5
6
A
B
C
D


V801 AAV1090
G2(1/2) G6 G5 G4 G3 G2(2/2) G1
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
DIRECT ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY
STATION
STEREO
FM MONO
SIMULATED STEREO
min
ch
*1 Dont used for lighting
G2 - G6
G7
IC801 PDG049-6
IC801: MICRO COMPUTER
C809 10/35
Q801: RESET
C801 4.7/50
R807 47k
Q801 XDC124ES
C802 0.1/50
X801 ASS1022 4.19MHz
C810 10/35
C803 220/6
C804 0.01
C805 0.047
C807 0.047
C806 0.047
C811 1000p
R808 4.7k
R814 47k
TEST MODE
TP
R801 100k
R802 100k
R803 100k
R804 100k
R805 100k
R806 100k
F2
F3
E0
E1
E2
E3
FREQ UP S807
FREQ DOWN S808
2 S809
1 S810
FM S811
AM S812
MEMORY S806
MEMORY SCAN S805
CD S813
TUNER S814
PHONO S815
AUTO /MONO S801
AUTO /MANUAL S804
DIRECT ACCESS S803
VCR /LINE S816
TAPE1 S817
TAPE2 S818
10 S819
9 S820
8 S821
7 S823
6 S824
5 S825
4 S826
3 S827
VR907 ACT1066
IC571(1/2) NJM4558S-X
IC571(2/2) NJM4558S-X
C973 4.7/50
C974 4.7/50
R977 39k
C975 22p
R979 4.3k
R975 47k
C977 0.01
R980 4.3k
R976 47k
C976 22p
C978 0.01
R978 39k
R981 470
R982 470
J4
MP
D.GND
BACK UP 15V
15V SUB
VFDP
FL
FL
TRANS assembly
C2 0.1/100
POWER TRANSFORMER
T1 ATS1337
220V
240V
C1 ACG1030(HE, HB, YPW) ACE-007(HEWZ)
J1
AC MAIN
AC SUB
GND
IC701, IC702: REGULATOR
C709 ACG1005
D705 HZS24-2L
C705 47/35
D711 HZS7B2L
R703 1.5k(2W)
R705 910
R704 910
R715 150(1W)
VOUT
VIN
IC701 M5F78M12L
D712 HZS6B2L
C710 47/10
C704 10/50
D706 HZS6B2L
R702 10k
D702 S5566
D703 S5566
D713 S5566
D710 HSS104-02
D709 HSS104-02
R701 3.3k(1/4)
C707 0.047/5.5
R706 580
C708 ACG1002
FU1 AEK-508 T1A/250V
C706 10/25
C711 470/35
IC702 M5F79M12L
D716 S5566
D715 S5566
SPEAKER TERMINAL assembly
SP-A
SP-B
20V/4Ω
HE, HB, YPW ONLY
HEWZ ONLY
L701 ATF-151
AC POWER CORD
ADG1021 (HE, HEWZ)
ADG1085 (HB)
ADG-064 (YPW)
AC220-230V/240V 50/60Hz

1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
☐ : Signal voltage at (55 W + 55 W 8Ω)output (1kHz)
☐ : DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

SP SWITCH assembly

S1	POWER
S570	SP A ON-OFF
S571	SP B ON-OFF

CONTROL assembly

S801	FM MODE AUTO/MONO
S803	DIRECT ACCESS
S804	FM TUNING AUTO/MANUAL
S805	MEMOLY SCANS
S806	MEMOLY
S807	FREQ UP
S808	FREQ DOWN
S809	2
S810	1
S811	FM
S812	AM
S813	CD
S814	TUNER
S815	PHONO
S816	VCR/LINE
S817	TAPE 1/DAT
S818	TAPE 2/ADAPTOR
S819	10
S820	9
S821	8
S823	7
S824	6
S825	5
S826	4
S827	3
S301	DIRECT ON/OFF

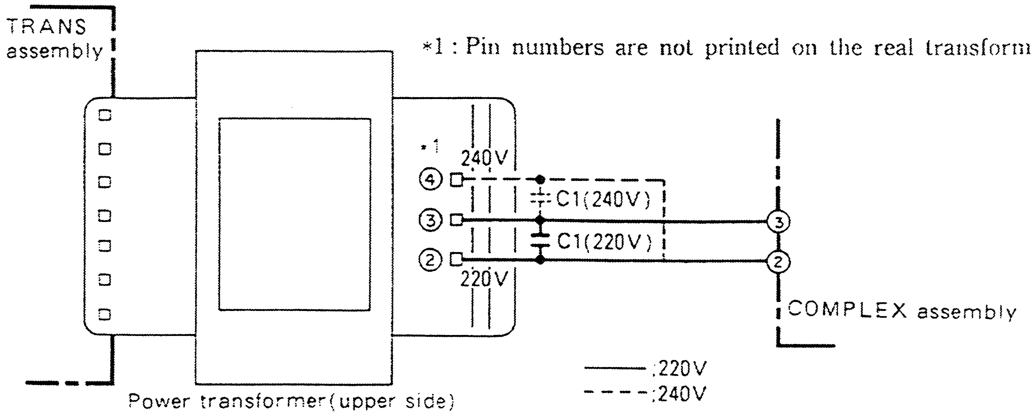
Line voltage selection (For HE, HB and HEWZ types)

Line voltage can be changed with the following steps.

1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary taps.
4. Change the connection to the capacitor (C1) on the primary side of the power transformer.
5. Stick the line voltage label on the rear panel.

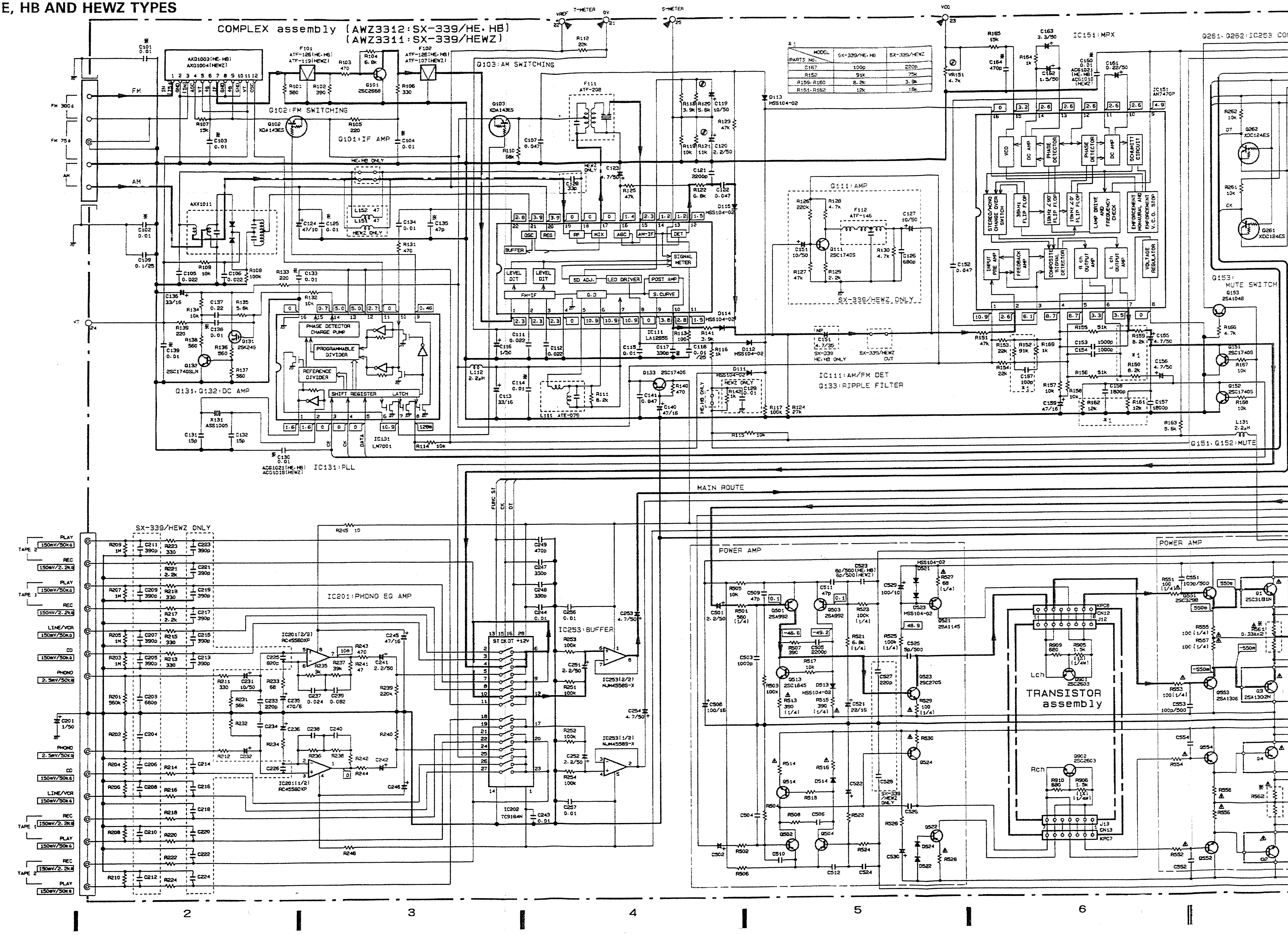
Part No.	Description
AAX−193	220V label
AAX−192	240V label

*1 : Pin numbers are not printed on the real transformer tap.


TRANS assembly
*1
240V
220V
④
③
②
C1(240V)
C1(220V)
③
②
COMPLEX assembly
——— ;220V
- - - - ;240V

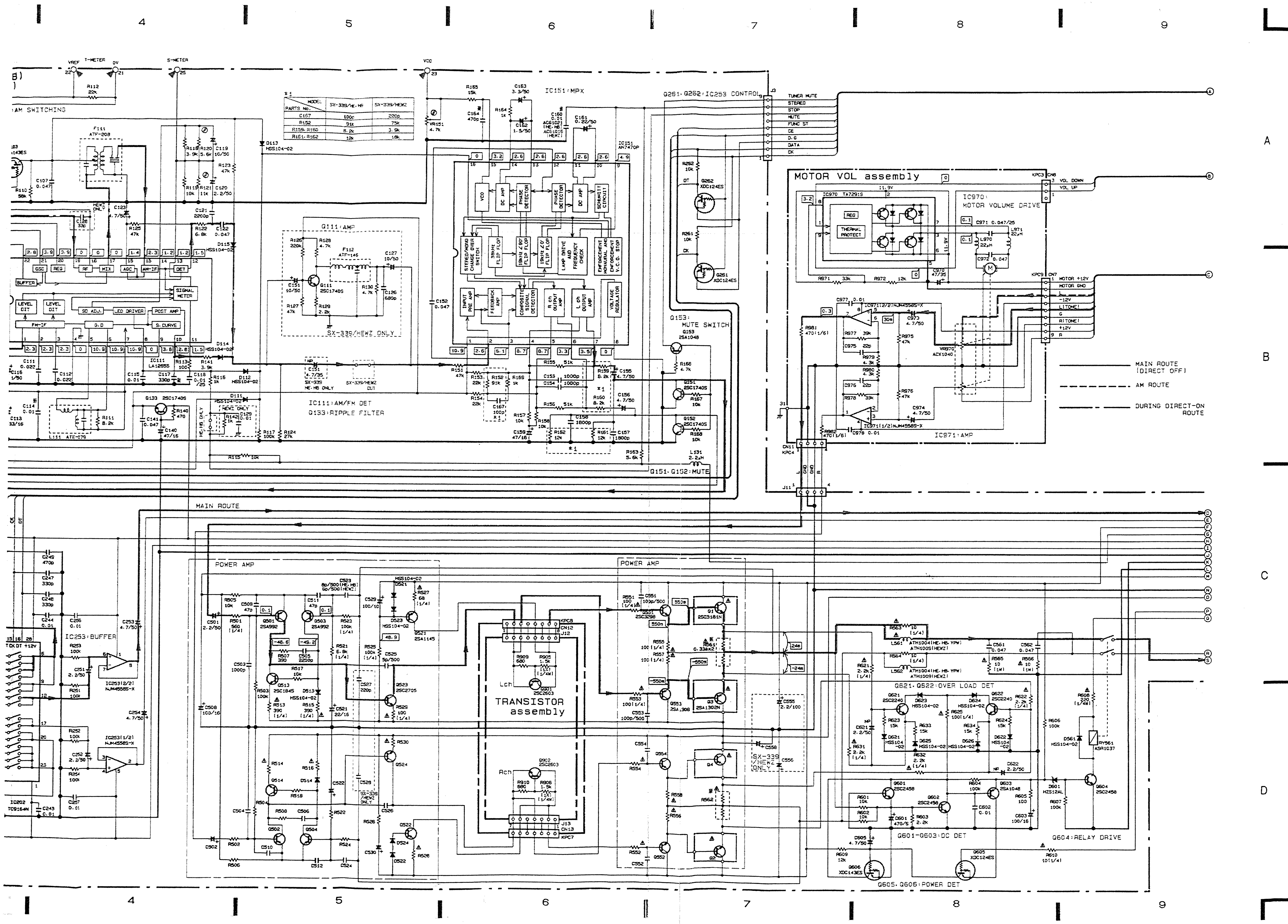
Power transformer(upper side)

2.2 FOR SX－339/HE, HB AND HEWZ TYPES


1
2
3
4
5
6
A
B
C
D
COMPLEX assembly (AWZ3312:SX-339/HE, HB)
(AWZ3311:SX-339/HEWZ)
VREF
T-METER
0V
S-METER
VCC
22
21
25
23
24
FM
FM 300Ω
FM 75Ω
AM
VT
AXQ1003(HE, HB)
AXQ1004(HEWZ)
F101
ATF-126(HE, HB)
ATF-119(HEWZ)
F102
ATF-126(HE, HB)
ATF-107(HEWZ)
Q101
2SC2668
Q101:IF AMP
Q102:FM SWITCHING
Q102
XDA143ES
Q103:AM SWITCHING
Q103
XDA143ES
F111
ATF-208
AXX1011
HE, HB ONLY
HEWZ ONLY
L152
L151
OSC
REG
RF
MIX
AGC
AM-IF
DET
BUFFER
SIGNAL METER
LEVEL DET
SD ADJ.
LED DRIVER
POST AMP
FM-IF
Q.D
S.CURVE
IC111
LA1265S
IC111:AM/FM DET
Q133:RIPPLE FILTER
Q133 2SC1740S
L111 ATE-079
Q111:AMP
Q111
2SC1740S
F112
ATF-146
SX-339/HEWZ ONLY
PHASE DETECTOR
CHARGE PUMP
PROGRAMMABLE DIVIDER
REFERENCE DIVIDER
SHIFT REGISTER
LATCH
IC131
LM7001
IC131:PLL
X131
ASS1005
Q131
2SK245
Q132
2SC1740SLN
Q131, Q132:DC AMP
CE
CK
DATA
AEG1021(HE, HB)
AEG1015(HEWZ)
IC151:MPX
IC151
AN7470P
VCO
DC AMP
PHASE DETECTOR
SCHMITT CIRCUIT
STEREO/MONO CHANGE OVER SWITCH
38kHz FLIP FLOP
19kHz 90° FLIP FLOP
19kHz 0° FLIP FLOP
LAMP DRIVE AND FREQUENCY CHECK
ENFORCEMENT MONAURAL AND ENFORCEMENT V.C.O. STOP
INPUT PRE AMP
FEEDBACK AMP
COMPOSITE SIGNAL DETECTOR
R ch OUTPUT AMP
L ch OUTPUT AMP
VOLTAGE REGULATOR
VR151 4.7k
D113 HSS104-02
D114 HSS104-02
D115 HSS104-02
D111 HSS104-02
D112 HSS104-02
SX-339 HE, HB ONLY
SX-339/HEWZ CUT
Q153: MUTE SWITCH
Q153 2SA1048
Q151 2SC1740S
Q152 2SC1740S
Q151, Q152:MUTE
Q261, Q262:IC253 CO
Q262 XDC124ES
Q261 XDC124ES
DT
CK
MAIN ROUTE
FUNC ST
CK
DT
SX-339/HEWZ ONLY
PLAY
REC
TAPE 2
TAPE 1
LINE/VCR
CD
PHONO
150mV/50kΩ
150mV/2.2kΩ
2.5mV/50kΩ
IC201:PHONO EQ AMP
IC201(2/2) RC4558DXP
IC201(1/2) RC4558DXP
IC202
TC9164N
ST CK DT +12V
IC253:BUFFER
IC253(2/2) NJM4558S-X
IC253(1/2) NJM4558S-X
POWER AMP
Q501 2SA992
Q503 2SA992
Q513 2SC1845
Q521 2SA1145
Q523 2SC2705
D513 HSS104-02
D521 HSS104-02
SX-339 /HEWZ ONLY
TRANSISTOR assembly
Lch
Rch
Q901 2SC2603
Q902 2SC2603
KPC8
CN12 J12
J13 CN13 KPC7
Q551 2SC3298
Q553 2SA1306
Q1 2SC3181N
Q3 2SA1302N
Q552
Q554
Q2
Q4

※1

MODEL / PARTS NO.	SX-339/HE, HB	SX-339/HEWZ
C167	100p	220p
R152	91k	75k
R159, R160	8.2k	3.9k
R161, R162	12k	18k


4
5
6
7
8
9
A
B
C
D
T-METER
S-METER
VCC
AM SWITCHING
F111 ATF-208
IC151:MPX
IC151 AN7470P
Q261, Q262: IC253 CONTROL
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.G
DATA
CK
Q111:AMP
F112 ATF-146
SX-339/HEWZ ONLY
VCO
DC AMP
PHASE DETECTOR
SCHMITT CIRCUIT
STEREO/MONO CHANGE OVER SWITCH
38kHz FLIP FLOP
19kHz FLIP FLOP
LAMP DRIVE AND FREQUENCY CHECK
ENFORCEMENT MONAURAL AND ENFORCEMENT V.C.O. STOP
INPUT PRE AMP
FEEDBACK AMP
COMPOSITE SIGNAL DECODER
R ch OUTPUT AMP
L ch OUTPUT AMP
VOLTAGE REGULATOR
IC111 LA1265S
IC111:AM/FM DET
Q133:RIPPLE FILTER
Q153: MUTE SWITCH
Q151, Q152:MUTE
MOTOR VOL assembly
IC970 TA7291S
IC970: MOTOR VOLUME DRIVE
THERMAL PROTECT
VOL DOWN
VOL UP
MOTOR +12V
MOTOR GND
IC971:AMP
IC971(1/2)NJM4558S-X
VR970 ACX1040
MAIN ROUTE (DIRECT OFF)
AM ROUTE
DURING DIRECT-ON ROUTE
MAIN ROUTE
IC253:BUFFER
IC253(2/2) NJM4558S-X
IC253(1/2) NJM4558S-X
IC202 TC9164N
POWER AMP
TRANSISTOR assembly
Lch
Rch
Q901 2SC2603
Q902 2SC2603
SX-339 /HEWZ ONLY
Q621, Q622:OVER LOAD DET
Q601-Q603:DC DET
Q604:RELAY DRIVE
Q605, Q606:POWER DET
RY561 ASR1037
ATH1004(HE, HB, YPW)
ATH1005(HEWZ)

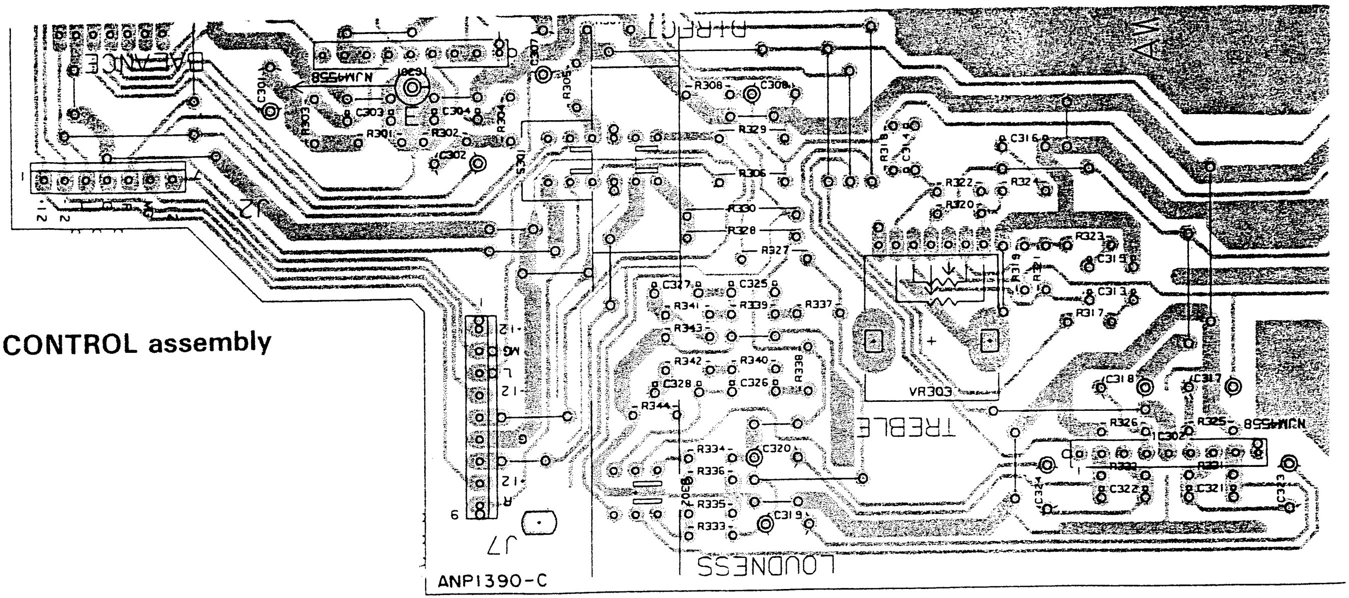
※1

MODEL / PARTS No.	SX-339/HE, HB	SX-339/HEWZ
C167	100p	220p
R152	91k	75k
R159, R160	8.2k	3.9k
R161, R162	12k	18k

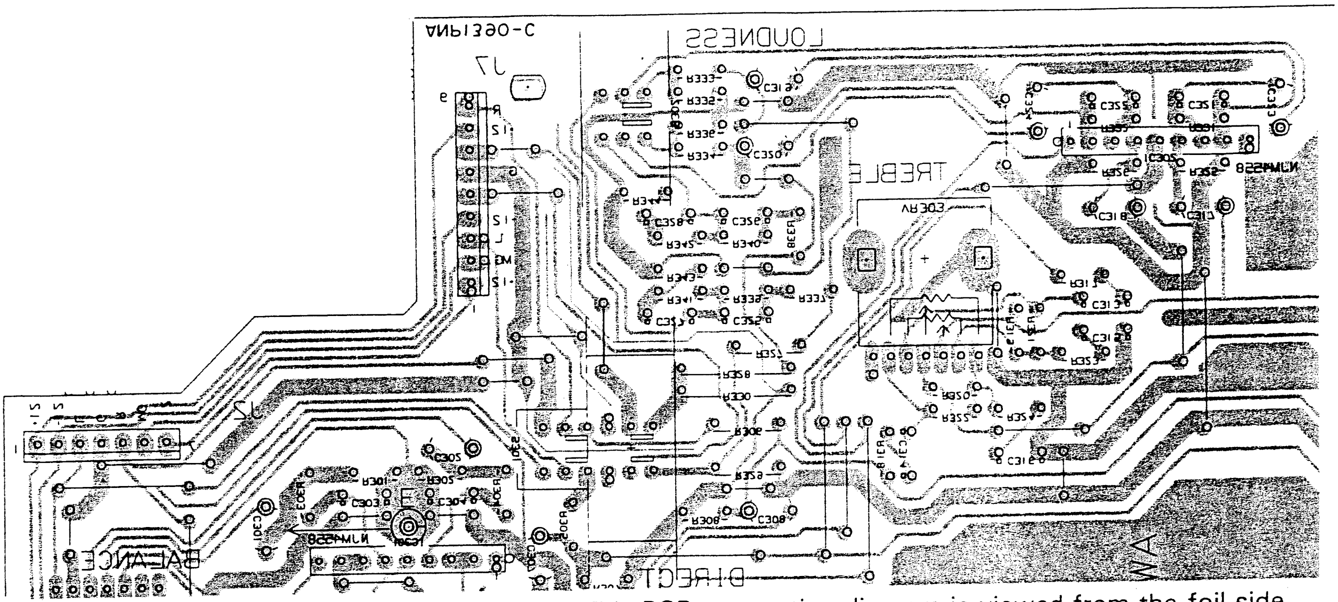
PCB Pattern

- The differences in PCB patterns between AWZ4877 and AWZ3299 are as follows.

CONTROL assembly


BALANCE
NJM4558
IC301
C301
C302
C303
C304
R301
R302
R303
R304
R305
C307
S301
DIRECT
R306
R308
C306
R327
R328
R329
R330
R318
C314
C316
R322
R324
R320
R323
C315
R319
R321
C313
R317
C327
C325
R341
R339
R337
R343
R342
R340
R338
C328
C326
R344
VR303
TREBLE
C318
C317
R326
R325
NJM4558
IC302
R334
C320
R336
R332
R331
C322
C321
C324
C323
R335
R333
C319
LOUDNESS
AM
J7
J2
ANP1390-C

This PCB connection diagram is viewed from the parts mounted side.


ANP1390-C
J7
J2
LOUDNESS
TREBLE
VR303
DIRECT
BALANCE
AM

This PCB connection diagram is viewed from the foil side.

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.
3. The capactor terminal marked with ◎(double circles) shows negatine terminal.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E○ ○ ○	E or E	Transistor
Q215 ○ ○ ○	or	Radiator type transistor
◎ D203 ○	D203	Diode

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
○ R237 ○	R237	Resistor
C513 ◎	+	Capacitor (Polarized)
C518		Capacitor (Non-polarized)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay

P.C.B. pattern diagram indication	Part Name
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

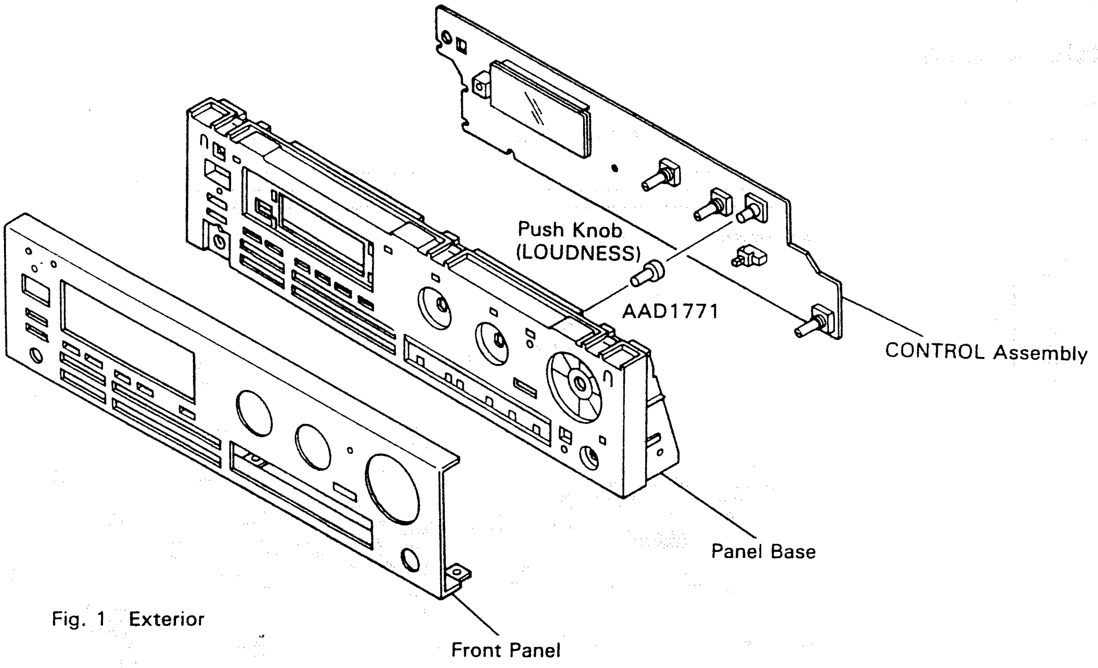

Push Knob
(LOUDNESS)
AAD1771
CONTROL Assembly
Panel Base
Front Panel

Fig. 1 Exterior

CONTROL ASSEMBLY

AWZ4877 and AWZ3299 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ3299	AWZ4877	
	S302 (LOUDNESS)	....	ASG1041	
	C321, C322	....	CCCSL390J50	
	C323, C324	....	CEAS100M50	
	C325, C326	....	CFTXA104J50	
	C327, C328	....	CFTXA823J50	
	R327, R328	RD1/8PM122J	RD1/8PM332J	
	R329, R330	RD1/8PM222J	RD1/8PM821J	
	R331, R332	....	RD1/8PM154J	
	R333, R334	....	RD1/8PM332J	
	R335, R336	....	RD1/8PM182J	
	R337, R338	....	RD1/8PM392J	
	R339, R340	....	RD1/8PM223J	
	R341, R342	....	RD1/8PM152J	
	R343, R344	....	RD1/8PM122J	

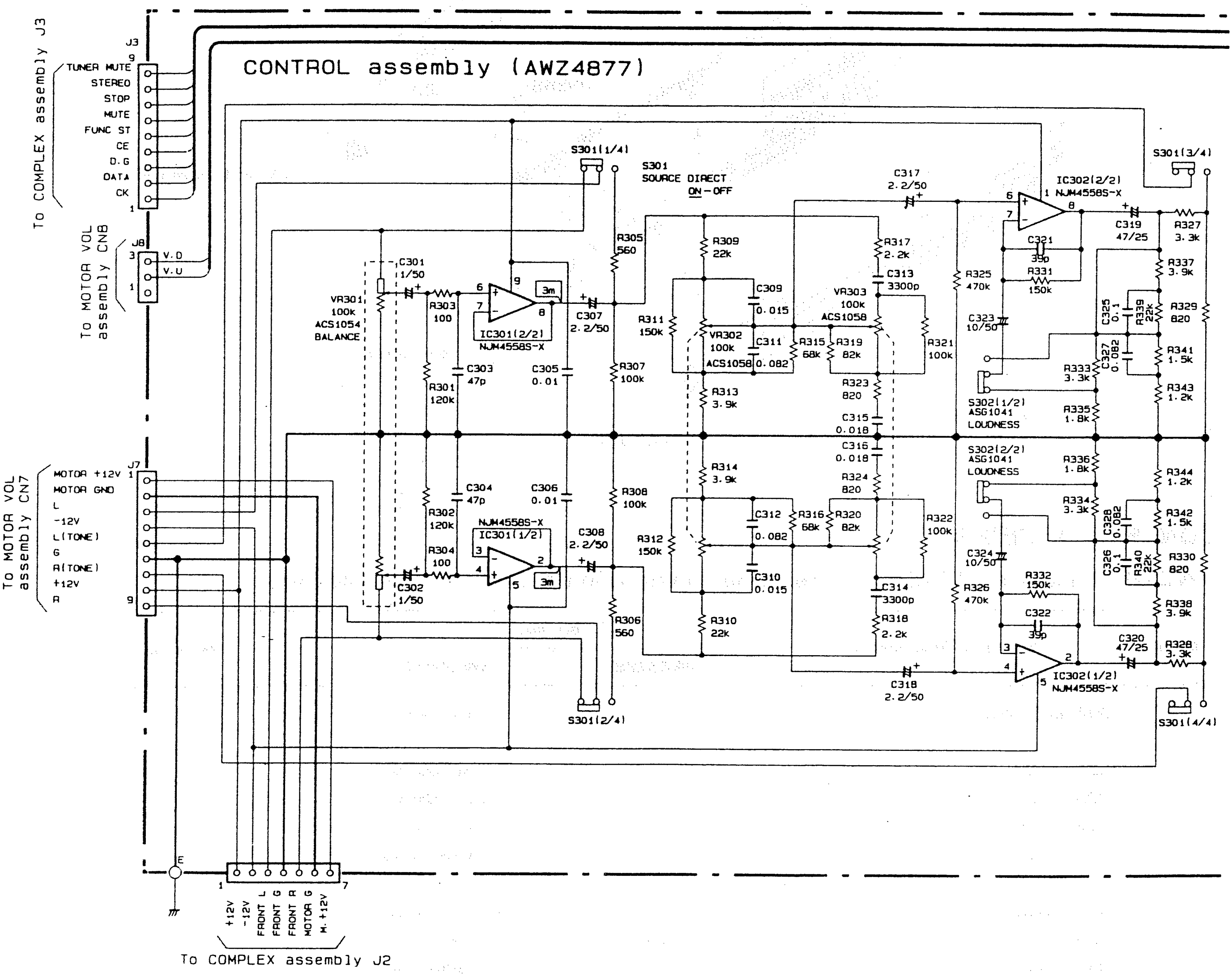
SCHEMATIC DIAGRAM AND PCB PATTERN

- For assemblies which are different in SX−302/HE, HB, HEWZ and SX−339/HE, the schematic diagram and PCB pattern are shown below.

CONTROL ASSEMBLY

Schematic Diagram

- The differences in schematic diagram between AWZ4877 and AWZ3299 are as follows.


CONTROL assembly (AWZ4877)
To COMPLEX assembly J3
J3
9
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.G
DATA
CK
1
To MOTOR VOL assembly CN8
J8
3
V.D
V.U
1
To MOTOR VOL assembly CN7
J7
1
MOTOR +12V
MOTOR GND
L
-12V
L(TONE)
G
R(TONE)
+12V
R
9
S301(1/4)
S301
SOURCE DIRECT
ON−OFF
S301(2/4)
S301(3/4)
S301(4/4)
C301
1/50
VR301
100k
ACS1054
BALANCE
R303
100
IC301(2/2)
NJM4558S-X
C307
2.2/50
R305
560
R301
120k
C303
47p
C305
0.01
R307
100k
R302
120k
C304
47p
C306
0.01
R308
100k
NJM4558S-X
IC301(1/2)
R304
100
C302
1/50
C308
2.2/50
R306
560
R311
150k
R312
150k
R309
22k
R310
22k
C309
0.015
C310
0.015
VR302
100k
ACS1058
C311
0.082
C312
0.082
R313
3.9k
R314
3.9k
R315
68k
R316
68k
R319
82k
R320
82k
VR303
100k
ACS1058
C317
2.2/50
R317
2.2k
C313
3300p
R321
100k
R323
820
C315
0.018
C316
0.018
R324
820
R322
100k
C314
3300p
R318
2.2k
C318
2.2/50
R325
470k
R326
470k
IC302(2/2)
NJM4558S-X
C321
39p
R331
150k
C323
10/50
S302(1/2)
ASG1041
LOUDNESS
S302(2/2)
ASG1041
LOUDNESS
C324
10/50
R332
150k
C322
39p
IC302(1/2)
NJM4558S-X
C319
47/25
R327
3.3k
R337
3.9k
C325
0.1
R339
22k
R329
820
C327
0.082
R341
1.5k
R333
3.3k
R343
1.2k
R335
1.8k
R336
1.8k
R344
1.2k
R334
3.3k
C328
0.082
R342
1.5k
C326
0.1
R340
22k
R330
820
R338
3.9k
C320
47/25
R328
3.3k
3m
E
1
7
+12V
-12V
FRONT L
FRONT G
FRONT R
MOTOR G
M.+12V
To COMPLEX assembly J2

Note:

Type 1

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   V : Signal voltage at rated output.
   : DC voltage (V) at no input signal unless otherwise noted. Value in ( ) is DC voltage at rated power.
   mV : Signal voltage at FM 1kHz, 100% MOD.
   ⇦ mA or ← mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

CONTROL assembly
S302 LOUDNESS

CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

SX−302/HE, HB, HEWZ and SX−339/HE have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		SX−339/HE	SX−302/HE	SX−302/HB	SX−302/HEWZ	
	CONTROL assembly	AWZ3299	AWZ4877	AWZ4877	AWZ4877	
	COMPLEX assembly	AWZ3312	AWZ3312	AWZ3312	AWZ3311 *	
NSP	SP SWITCH assembly	AWZ3007	AWZ3307	AWZ3307	AWZ3000 *	
NSP	SP TERMINAL assembly	AWZ3306	AWZ3306	AWZ3306	AWZ3302 *	
NSP	LINE FILTER assembly	....	....	....	AWZ3002 *	
⚠	C1 capacitor (0.1)	....	....	....	ACE−507 *	
⚠	C1 capacitor (0.022)	ACG1030	ACG1030	ACG1030	....	
⚠	AC power cord	ADG1021	ADG1049	ADG1118	ADG1049	
⚠	Strain relief	....	AEC−882	AEC−882	AEC−882	For AC power cord
	Front panel	ANB1444	ANB1565	ANB1565	ANB1565	
NSP	Rear panel	ANC1679	ANC2086	ANC2086	ANC2085	
	Panel	AAK2124	AAK2477	AAK2477	AAK2477	
	Name plate	AAM1029	VAM1032	VAM1032	VAM1032	
	Push knob (LOUDNESS)	....	AAD1771	AAD1771	AAD1771	Refer to Fig. 1
	Function knob	AAD1812	AAD2454	AAD2454	AAD2454	
	Screw (EARTH)	....	....	....	ABA1047 *	
	PCB holder	....	....	....	ANG1062 *	
	Packing case	AHD2019	AHD2647	AHD2603	AHD2647	
	Remote control unit (CU−SX022)	AXD1198	....	....	....	
	Remote control unit (CU−SX070)	....	AXD1364	AXD1364	AXD1364	
	FM antenna assembly	....	....	....	ADH1002 *	
	FM antenna	ADH1004	ADH1004	ADH1004	....	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1182	ARE1286	....	....	
	Operating instructions (English)	....	....	ARB1445	....	
	Operating instructions (German)	....	....	....	ARC1435	

*Note : All the assemblies and the parts with * are the same as those of SX−339/HEWZ type in the service manual ARP2223 for SX−339. Therefore, refer to SX−339/HEWZ type.*

-R 352

4/07

PIONEER

The Art of Entertainment

Service Manual

ORDER NO.
ARP2772

STEREO RECEIVER

SX-302 HE, HB, HEWZ

● **Refer to the service manual ARP2223 for SX−339/HE.**

● This manual is applicable to SX−302/HE, HB and HEWZ.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
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4/09

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• FOR HE AND HB TYPES

NOTE

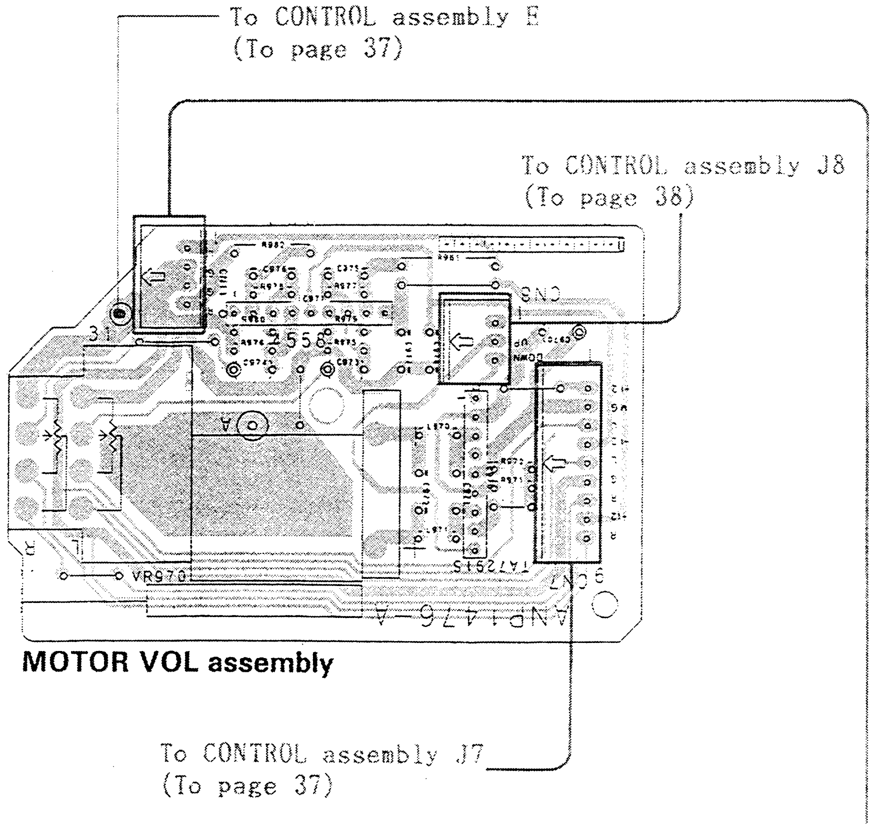
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

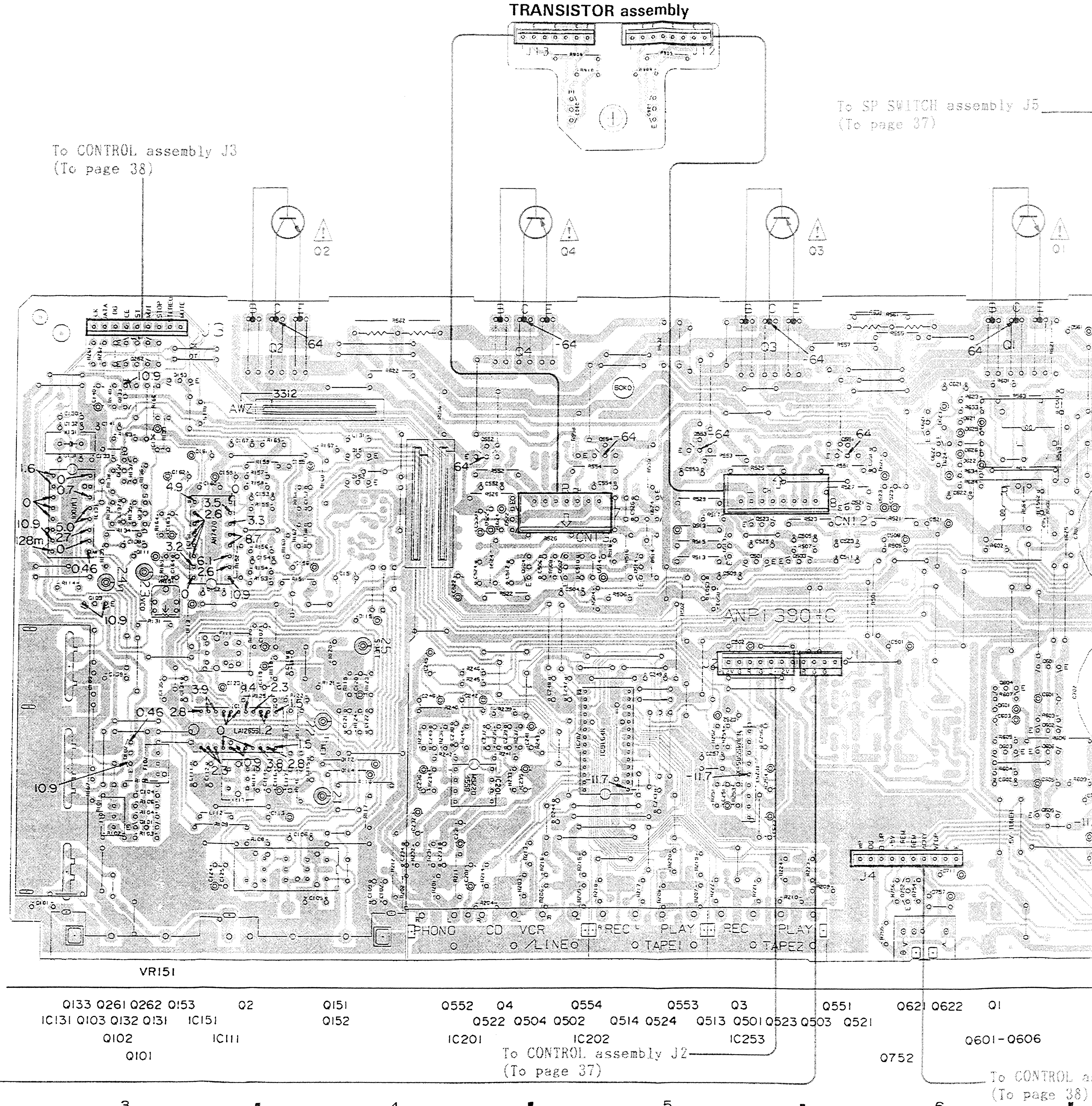
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E Q504	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

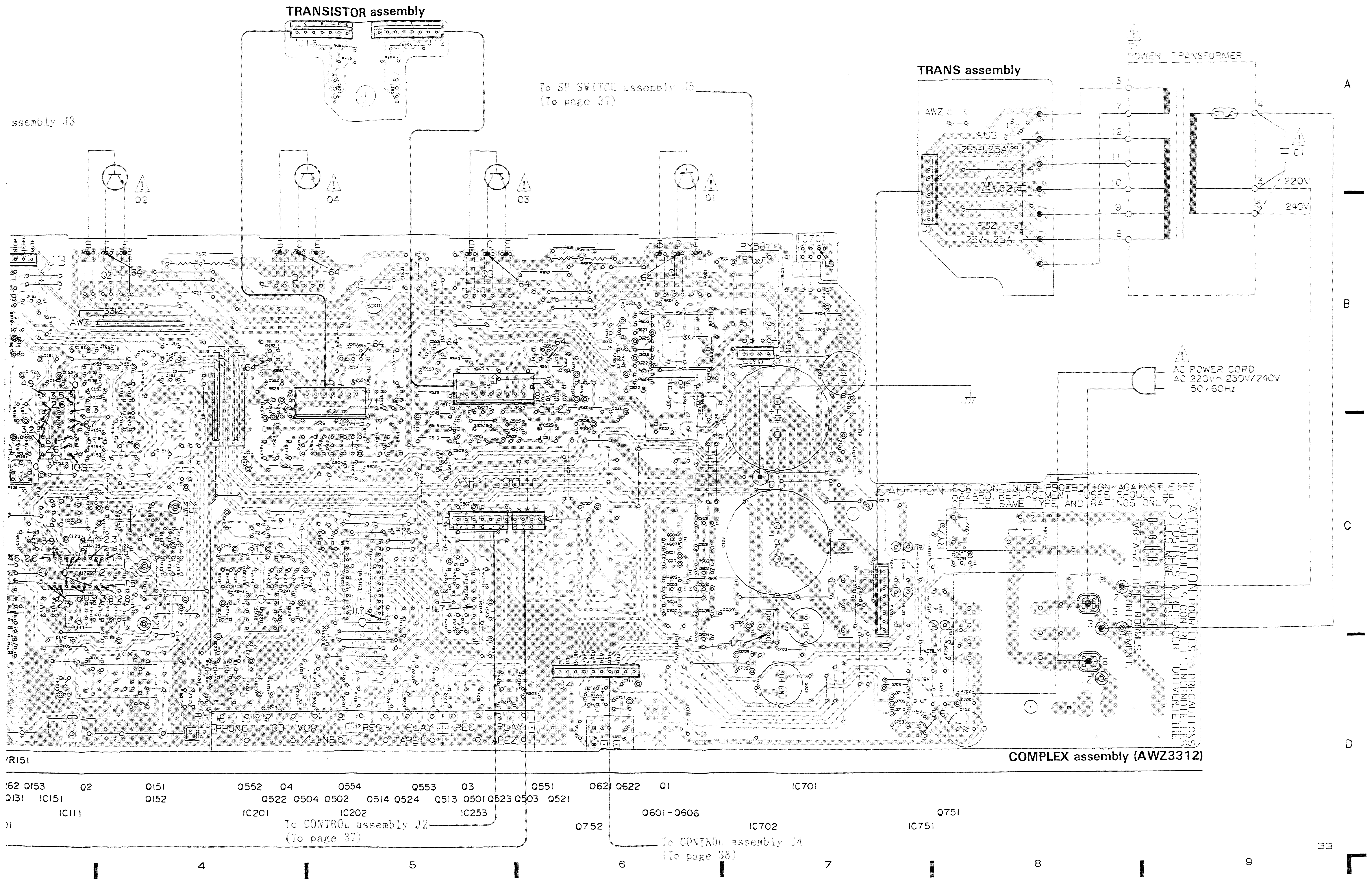
Others

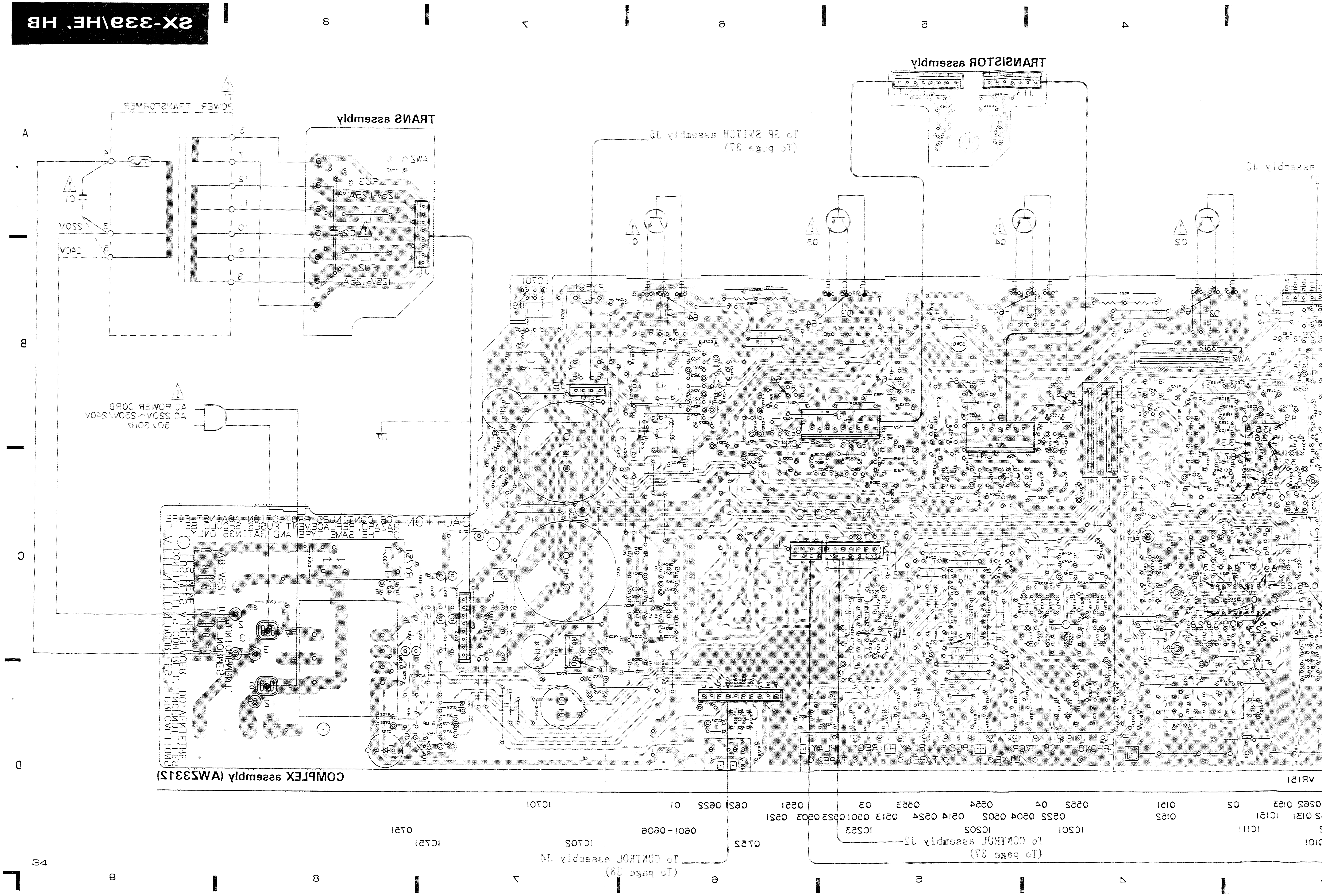
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

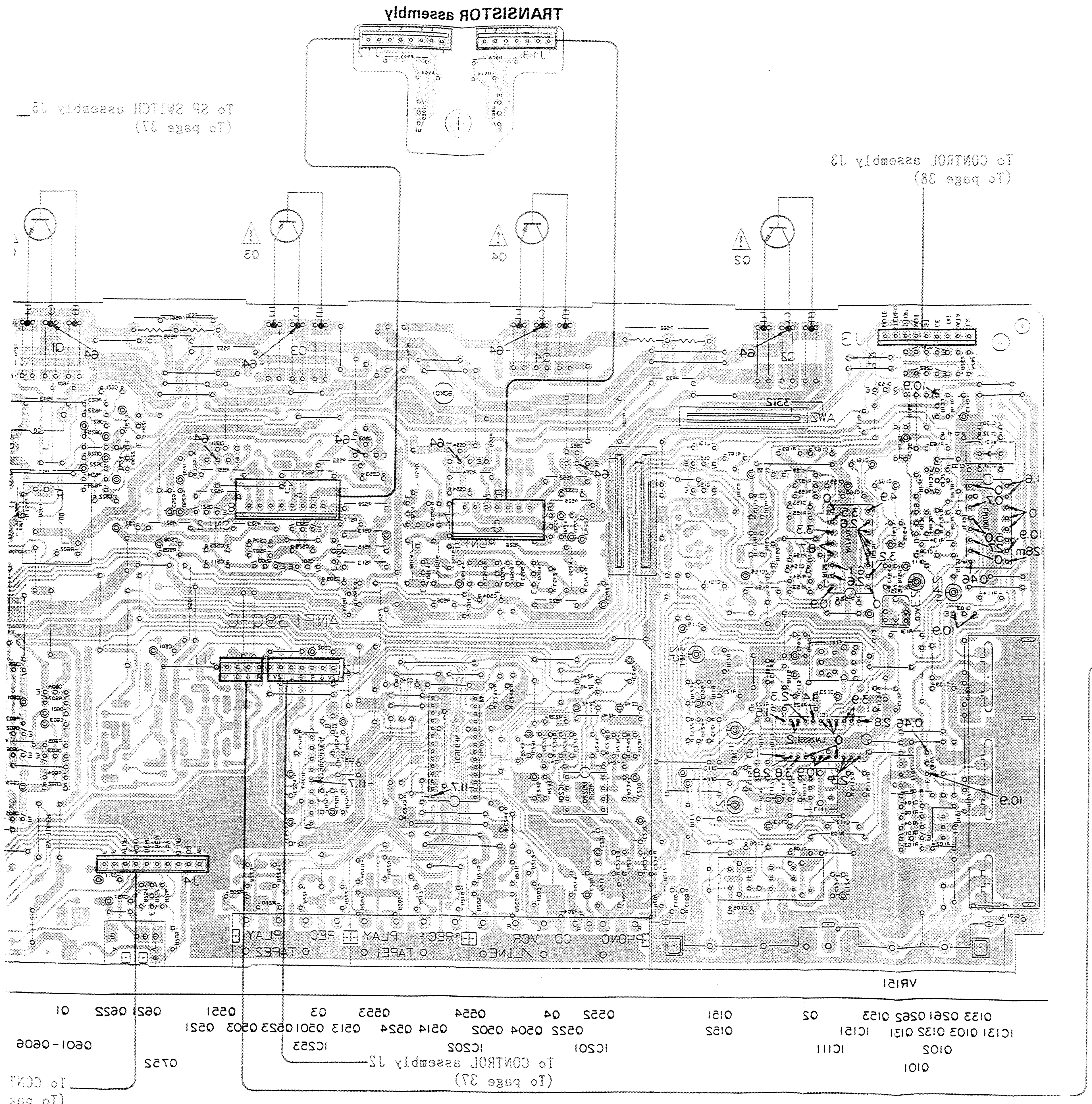
3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

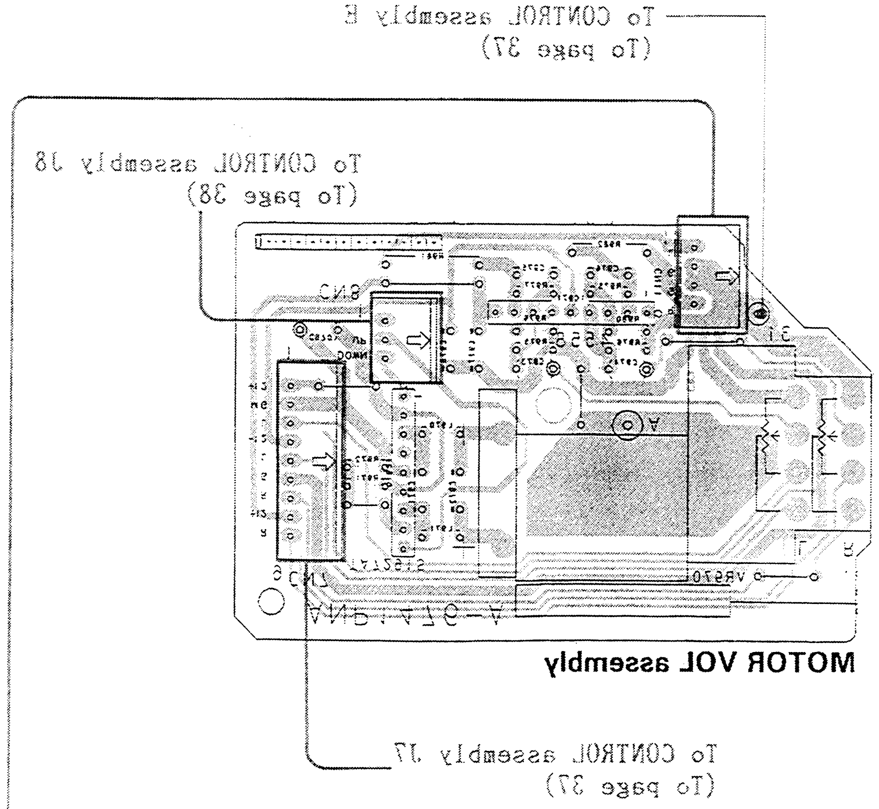

To CONTROL assembly E
(To page 37)
To CONTROL assembly J8
(To page 38)
CN8
CN7
TA7291S
VR970
ANP1476-A
MOTOR VOL assembly
To CONTROL assembly J7
(To page 37)


TRANSISTOR assembly
J13
J12
To SP SWITCH assembly J5
(To page 37)
To CONTROL assembly J3
(To page 38)
Q2
Q4
Q3
Q1
J3
AWZ
CN1
CN12
ANP1390-C
J4
PHONO
CD
VCR
/LINE
REC
PLAY
TAPE1
TAPE2
VR151
Q133 Q261 Q262 Q153
IC131 Q103 Q132 Q131
Q102
Q101
Q2
IC151
IC111
Q151
Q152
Q552 Q4
Q522 Q504 Q502
IC201
Q554
Q514 Q524
IC202
Q553 Q3
Q513 Q501 Q523 Q503
IC253
Q551
Q521
Q621 Q622
Q1
Q601-Q606
Q752
To CONTROL assembly J2
(To page 37)
To CONTROL a
(To page 38)


4
5
6
7
8
9
A
B
C
D
TRANSISTOR assembly
J13
J12
To SP SWITCH assembly J5
(To page 37)
ssembly J3
Q2
Q4
Q3
Q1
TRANS assembly
AWZ
FU3
125V-1.25A
C2
FU2
125V-1.25A
J1
T1
POWER TRANSFORMER
13
7
12
11
10
9
8
4
3
5
C1
220V
240V
AC POWER CORD
AC 220V~230V/240V
50/60Hz
RY561
IC701
J5
CN12
CN13
AWZ3312
ANP1390-C
64
-11.7
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION POUR LES PRECAUTIONS CONTINUES CONTRE LES INCENDIES UTILISER DES FUSIBLES DE MEME TYPE
RY751
FU1 125V-8A
ACRLY
-5.6V
B UP
-5V
J4
PHONO
CD
VCR /LINE
REC
PLAY
TAPE1
TAPE2
VR151
COMPLEX assembly (AWZ3312)
Q162 Q153
Q131
IC151
IC111
Q2
Q151
Q152
Q552
Q4
Q522
Q504
Q502
Q554
Q514
Q524
IC201
IC202
Q553
Q513
Q3
Q501
Q523
Q503
IC253
Q551
Q521
Q621
Q622
Q1
Q601-Q606
Q752
IC701
IC702
Q751
IC751
To CONTROL assembly J2
(To page 37)
To CONTROL assembly J4
(To page 38)

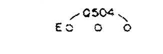
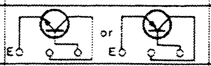
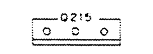
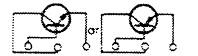
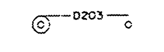
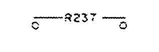
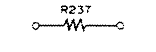
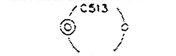
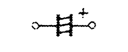
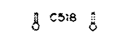
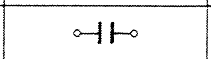

8
7
6
5
4
A
B
C
D
9
TRANSISTOR assembly
TRANS assembly
POWER TRANSFORMER
C1
220V
240V
FU3
125V-1.25A
C2
FU2
125V-1.25A
AWZ
To SP SWITCH assembly J5
(To page 37)
Q1
Q3
Q4
Q2
AC POWER CORD
AC 220V~230V/240V
50/60Hz
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY
ANP1390-C
PHONO
CD
VCR/LINE
REC PLAY
TAPE1
REC PLAY
TAPE2
COMPLEX assembly (AWZ3312)
VR151
IC701
Q1
Q622
Q621
Q551
Q3
Q553
Q554
Q4
Q552
Q151
Q2
Q262
Q153
Q521
Q503
Q523
Q501
Q513
Q514
Q524
Q502
Q504
Q522
Q152
IC151
IC131
Q751
IC751
IC702
Q601-Q606
Q752
IC253
IC202
IC201
IC111
To CONTROL assembly J4
(To page 38)
To CONTROL assembly J2
(To page 37)


TRANSISTOR assembly
To SP SWITCH assembly J5
(To page 37)
To CONTROL assembly J3
(To page 38)
Q1
Q2
Q3
Q4
J3
ANP-1359-C
PHONO
CD
VCR
LINE
TAPE1
REC
PLAY
TAPE2
VR151
Q1 Q622 Q621 Q551 Q3 Q553 Q554 Q4 Q552 Q151 Q2 Q153 Q262 Q261 Q133
Q521 Q503 Q523 Q501 Q513 Q524 Q514 Q502 Q504 Q522 Q152 IC151 IC131 Q103 Q132 Q131
Q601-Q606 IC253 IC202 IC201 IC111 Q102
Q752 Q101
To CONTROL assembly J2
(To page 37)
To CONT
(To pag


To CONTROL assembly E
(To page 37)
To CONTROL assembly J8
(To page 38)
CN3
CN6
VR570
MOTOR VOL assembly
To CONTROL assembly J7
(To page 37)

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

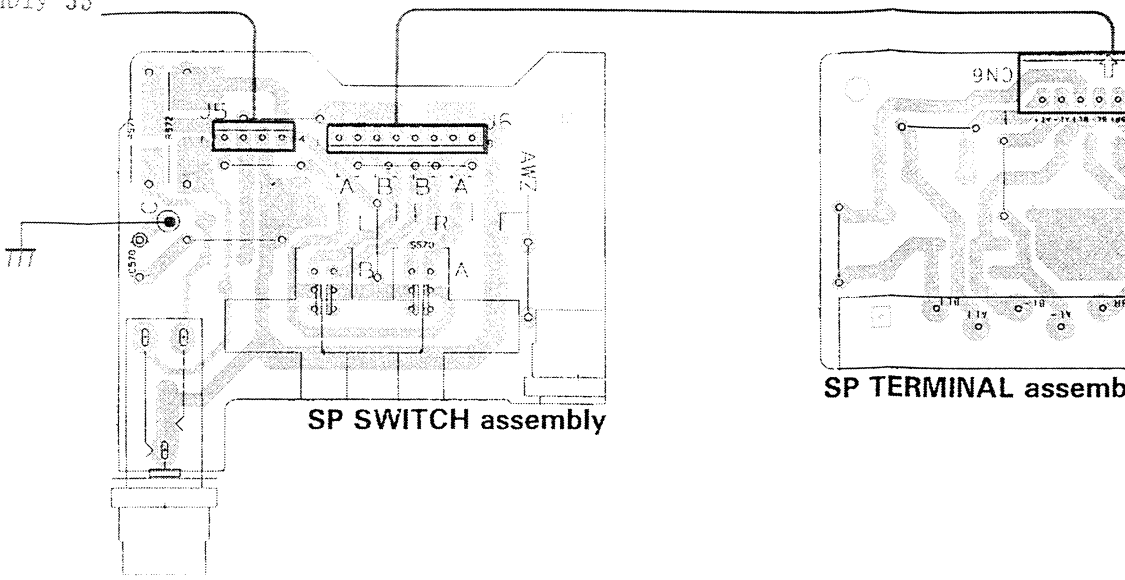
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
 Q504		Transistor
 Q215		Radiator type transistor
 D203	D203	Diode
 R237	 R237	Resistor
 C513		Capacitor (Polarity)
 C518		Capacitor (Non-polarity)

Others

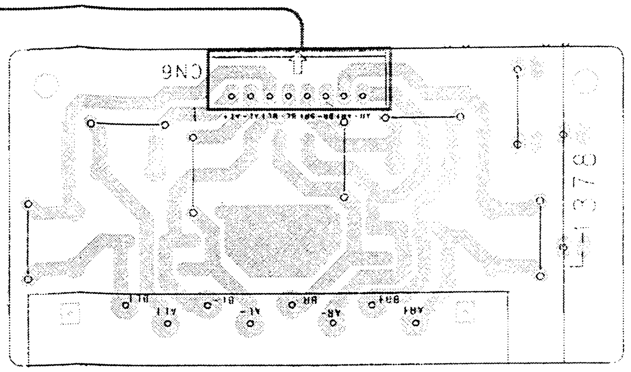
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

To COMPLEX assembly J5
(To page 33)

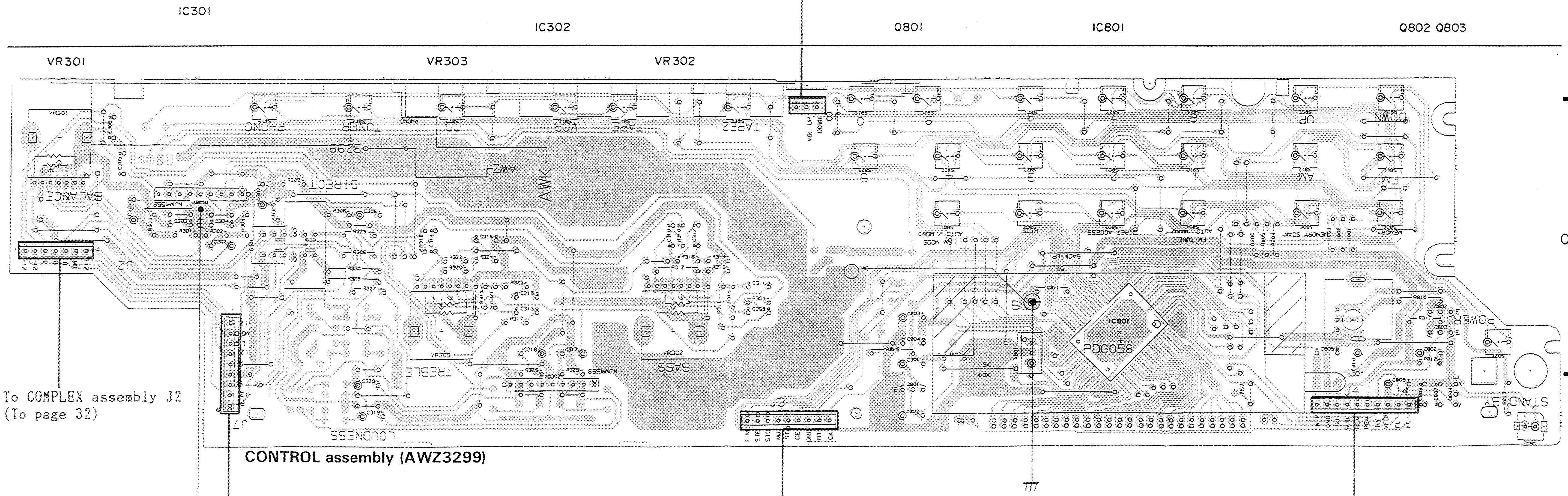


SP SWITCH assembly



SP TERMINAL assembly

To MOTOR VOL assembly CN8
(To page 31)



To COMPLEX assembly J2
(To page 32)

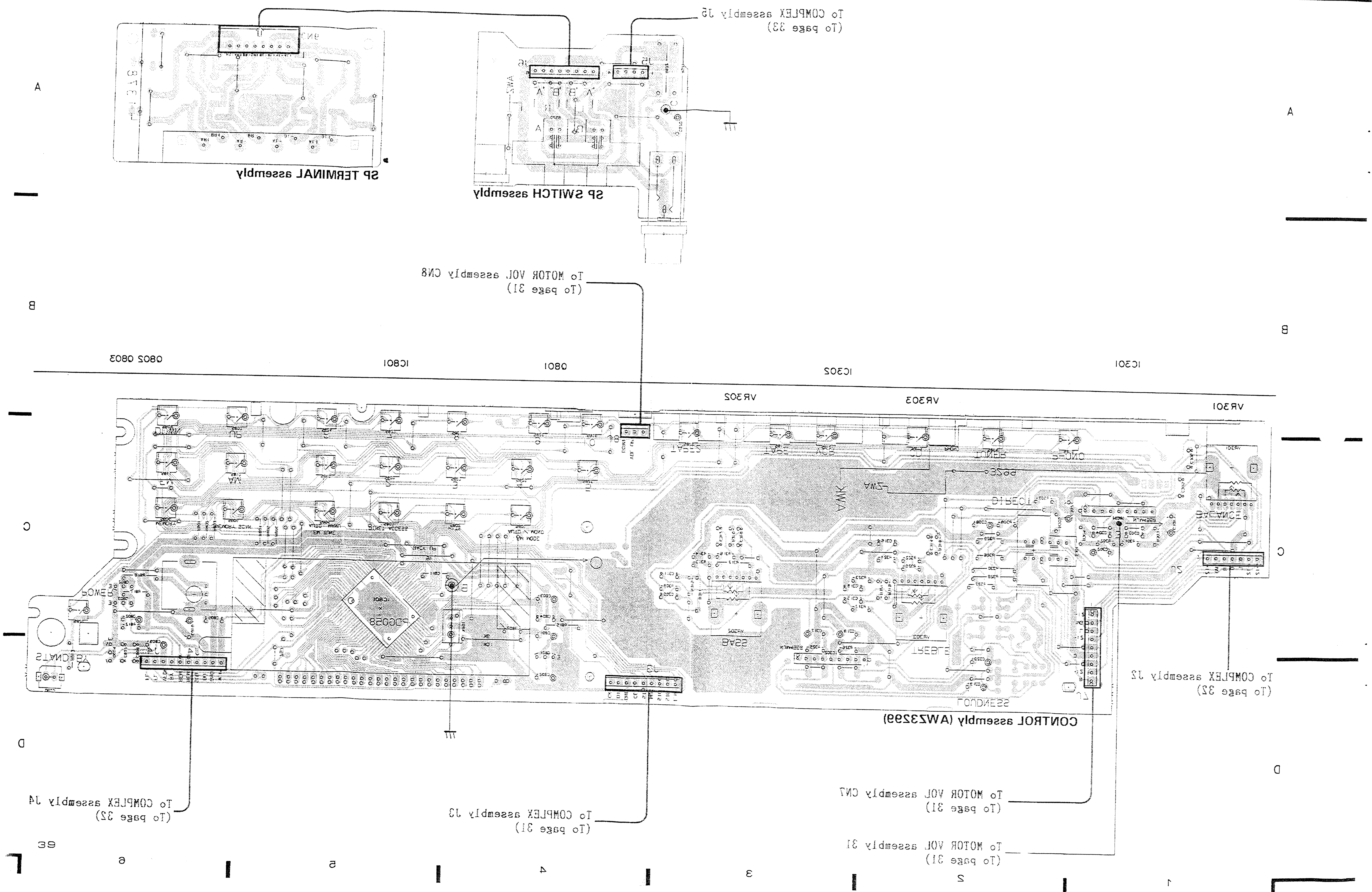
CONTROL assembly (AWZ3299)

To MOTOR VOL assembly CN7
(To page 31)

To COMPLEX assembly J3
(To page 31)

To COMPLEX assembly J4
(To page 32)

To MOTOR VOL assembly 31
(To page 31)


SP TERMINAL assembly
SP SWITCH assembly
To COMPLEX assembly J5
(To page 33)
To MOTOR VOL assembly CN8
(To page 31)
Q802 Q803
IC801
Q801
IC302
IC301
VR302
VR303
VR301
PDG058
BASS
TREBLE
LOUDNESS
BALANCE
DIRECT
CONTROL assembly (AWZ3299)
To COMPLEX assembly J2
(To page 32)
To COMPLEX assembly J4
(To page 32)
To COMPLEX assembly J3
(To page 31)
To MOTOR VOL assembly CN7
(To page 31)
To MOTOR VOL assembly J1
(To page 31)
A
B
C
D
1
2
3
4
5
6

• FOR HEWZ TYPE

- As to the other assemblies, refer to "FOR HE AND HB TYPES".

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

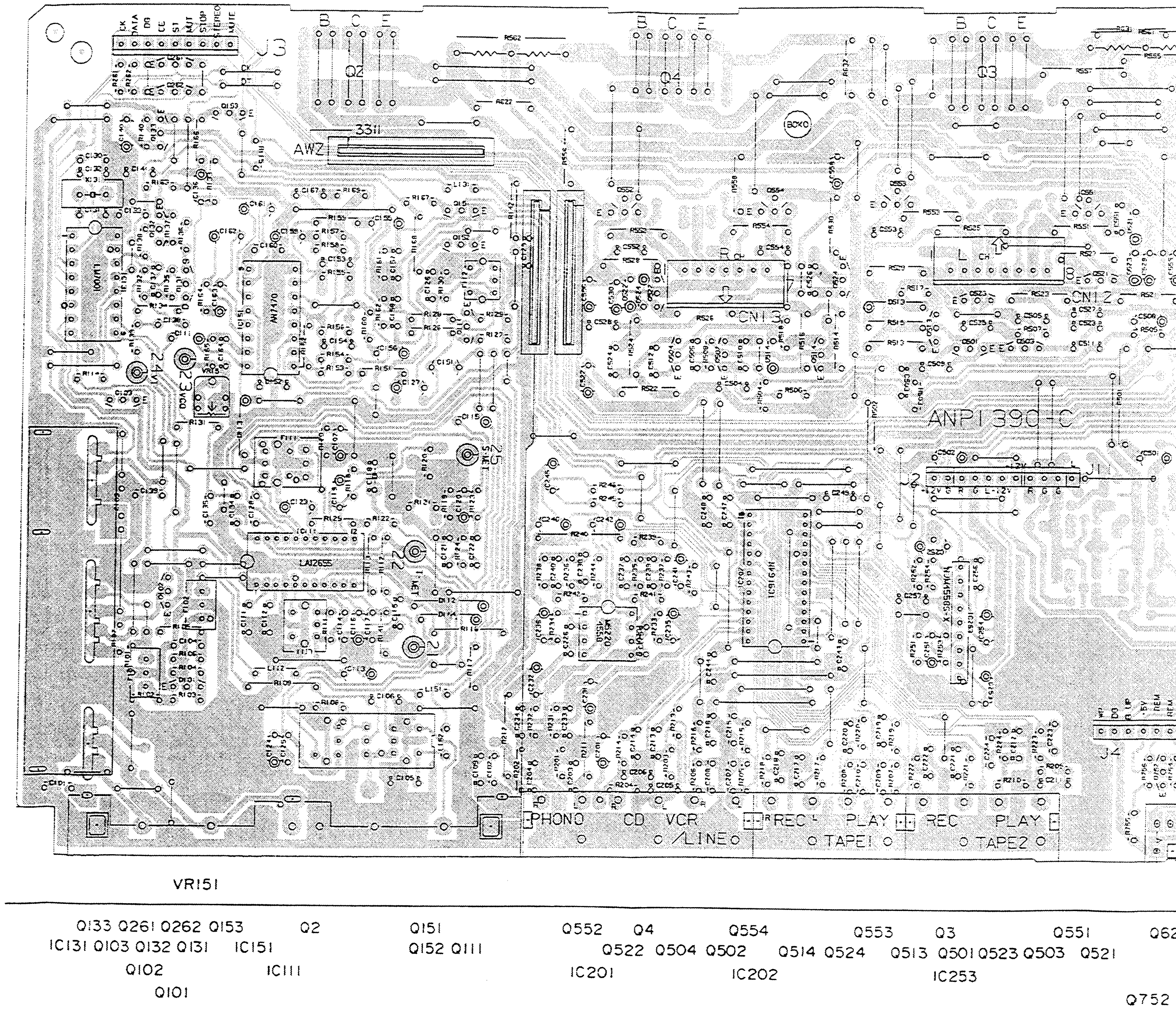
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
D504 E	E or E	Transistor
D215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

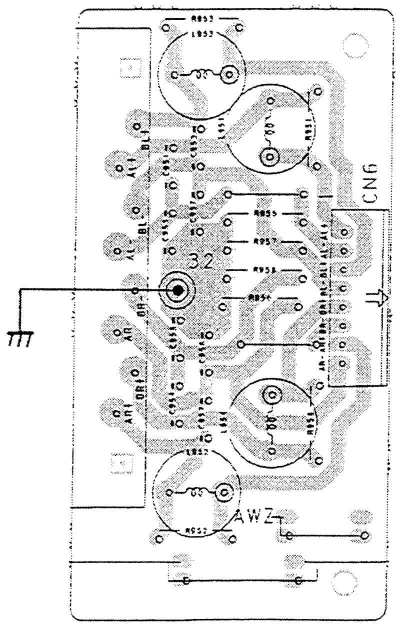
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

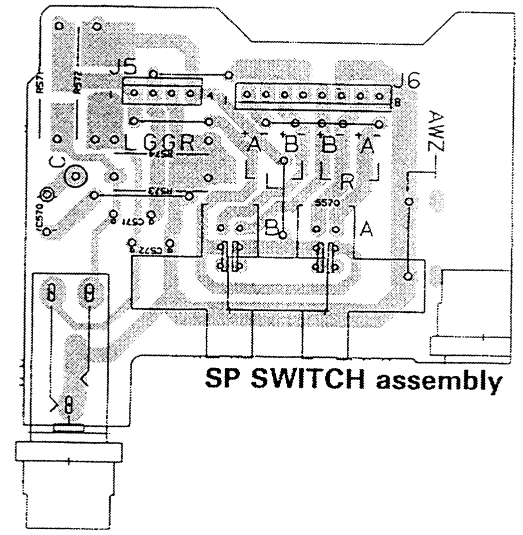
3. The capactor terminal marked with ◎ (double circles) shows negatine termianl.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

COMPLEX assembly (AWZ3311)


J3
Q2
Q4
Q3
AWZ 3311
CN1
CN12
ANP1390-C
J2
J1
LA1265
PHONO
CD
VCR
/LINE
REC
PLAY
TAPE1
TAPE2
J4
VR151
Q133 Q261 Q262 Q153
IC131 Q103 Q132 Q131
Q102
Q101
Q2
IC151
IC111
Q151
Q152 Q111
Q552
Q4
Q522 Q504 Q502
IC201
Q554
IC202
Q514 Q524
Q553
Q3
Q513 Q501 Q523 Q503
IC253
Q551
Q521
Q62
Q752

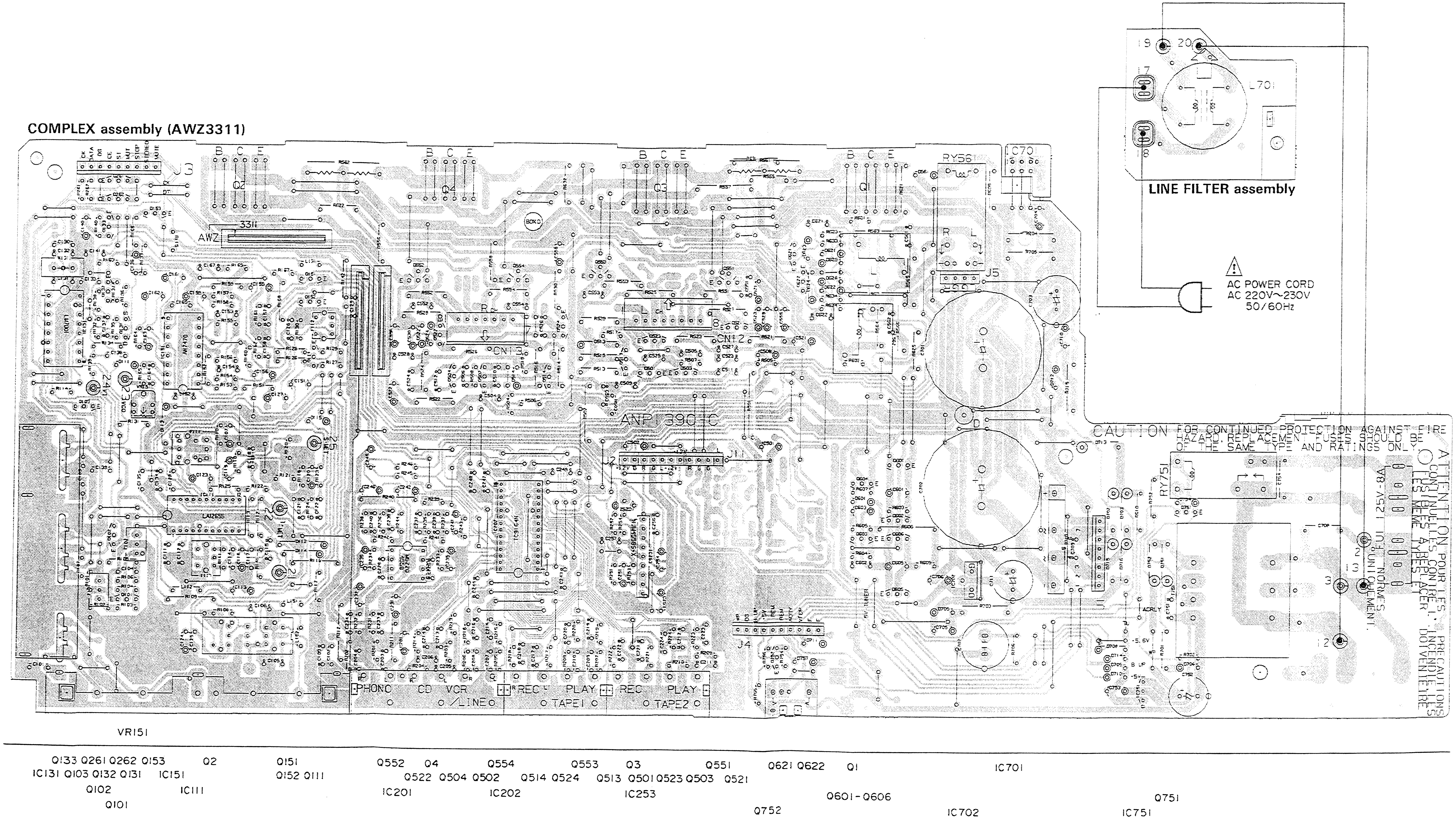


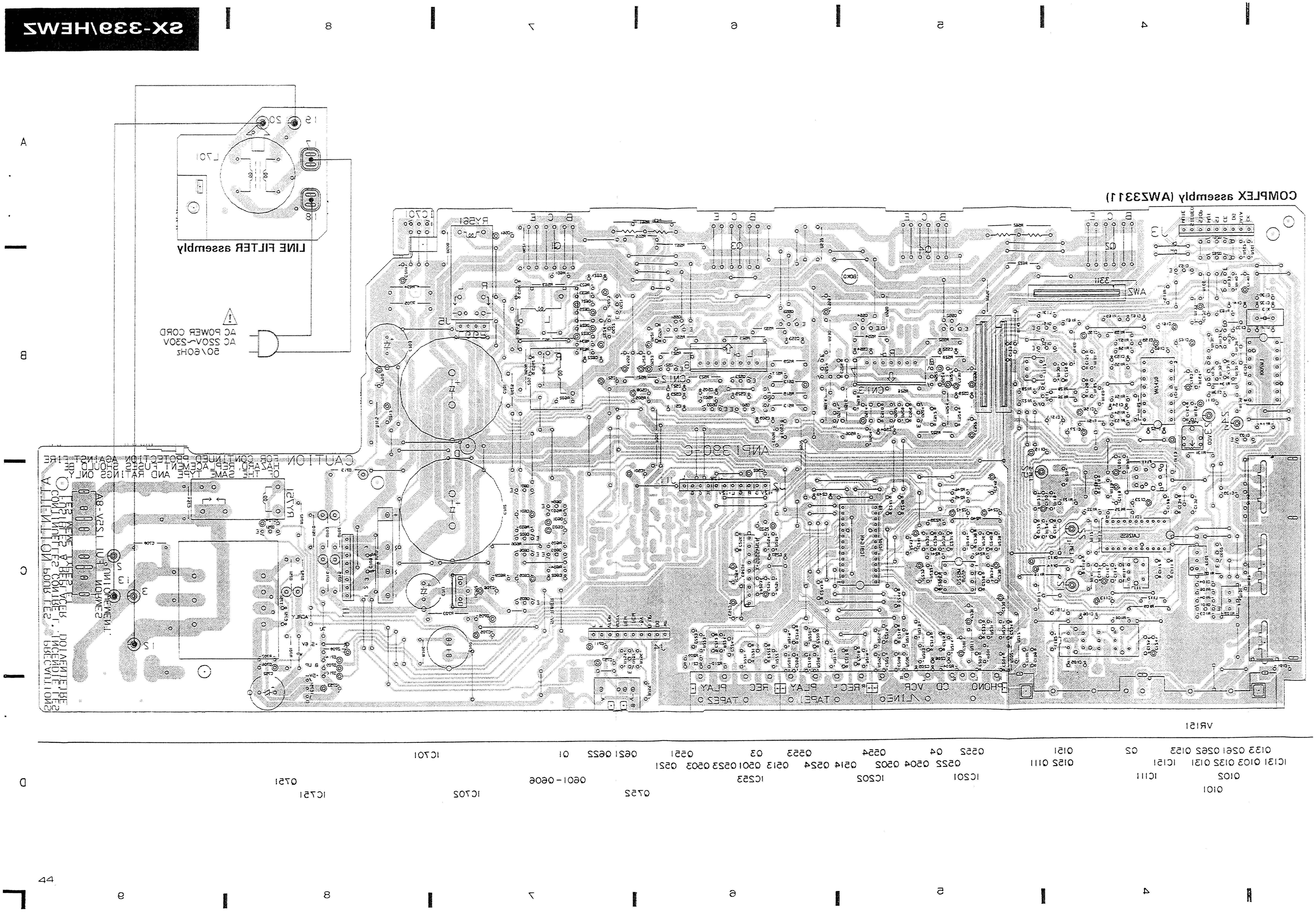
SP TERMINAL assembly


J5
J6
L G G R
A B B A
L R
AWZ

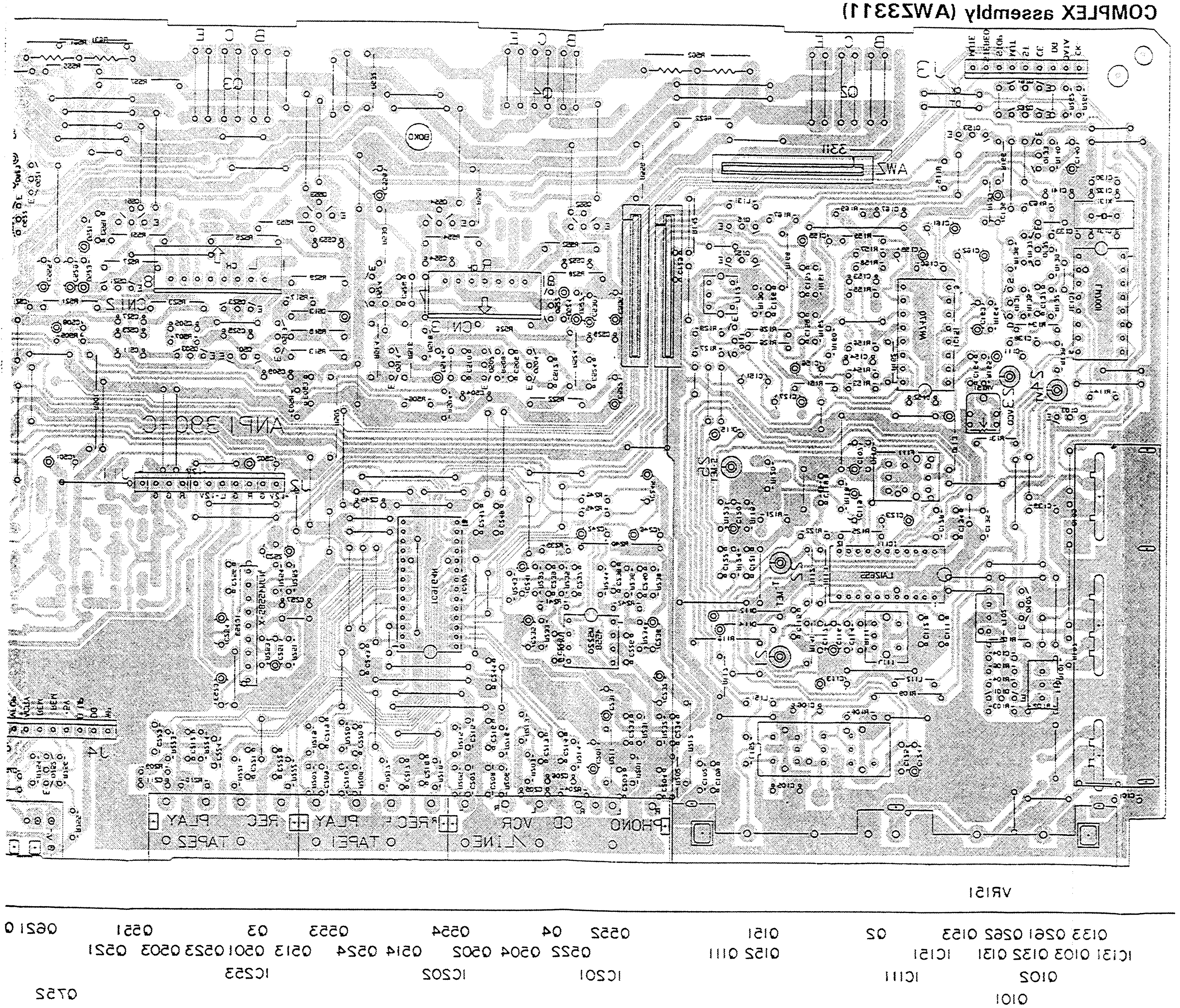
SP SWITCH assembly

COMPLEX assembly (AWZ3311)

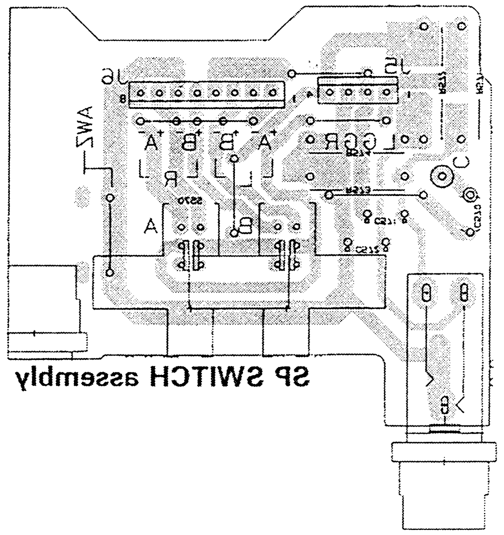

LINE FILTER assembly
19
20
17
18
L701
AC POWER CORD
AC 220V~230V
50/60Hz
AWZ 3311
B C E
Q2
Q4
Q3
Q1
RY561
IC701
J3
J5
CN13
CN12
J11
J2
J4
NH470
LA1265S
ANP1390-C
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE LES FUSIBLES A REPLACER DOIVENT ETRE LES MEME TYPES ET NORMES UNIQUEMENT.
125V-8A
RY751
ACRLY
-5.6V
-5V
12
13
PHONO
CD
VCR
/LINE
REC
PLAY
TAPE1
REC
PLAY
TAPE2
VR151
Q133 Q261 Q262 Q153
IC131 Q103 Q132 Q131
Q102
Q101
IC151
IC111
Q2
Q151
Q152 Q111
Q552
Q4
Q522 Q504 Q502
IC201
Q554
IC202
Q514 Q524
Q553
Q3
Q513 Q501 Q523 Q503
IC253
Q551
Q521
Q752
Q621 Q622
Q1
Q601-Q606
IC701
IC702
Q751
IC751


9
8
7
6
5
4
A
B
C
D
LINE FILTER assembly
L701
AC POWER CORD
AC 220V~230V
50/60Hz
COMPLEX assembly (AWZ3311)
RY561
RY151
ANP1390-C
AWZ 3311
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION
PHONO
CD
VCR
PLAY
REC
TAPE1
TAPE2
LINE
VR151
Q133 Q261 Q262 Q153 Q2 Q151 Q552 Q4 Q554 Q553 Q3 Q551 Q621 Q622 Q1 IC701
IC131 Q103 Q132 Q131 IC151 Q152 Q111 Q522 Q504 Q502 Q514 Q524 Q513 Q501 Q523 Q503 Q521
Q102 IC111 IC201 IC202 IC253 Q601 – Q606 Q751
Q101 Q752 IC702 IC751

COMPLEX assembly (AWZ3311)

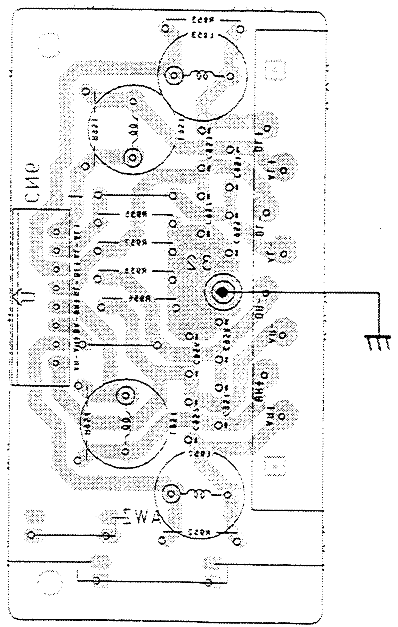


AWZ 3311
ANP1390-C
J1
J2
J3
J4
CN1
CN2
Q2
Q3
Q4
PHONO
CD
VCR
LINE
TAPE1
PLAY
REC
TAPE2
VR151
Q133 Q261 Q262 Q153
IC131 Q103 Q131 Q132 IC151
Q102
Q101
IC111
Q2
Q151
Q152 Q111
Q552
Q4
Q522 Q504 Q502
IC201
IC202
Q554
Q514 Q524
Q553
Q3
Q513 Q501 Q523 Q503 Q521
IC253
Q551
Q621
Q752

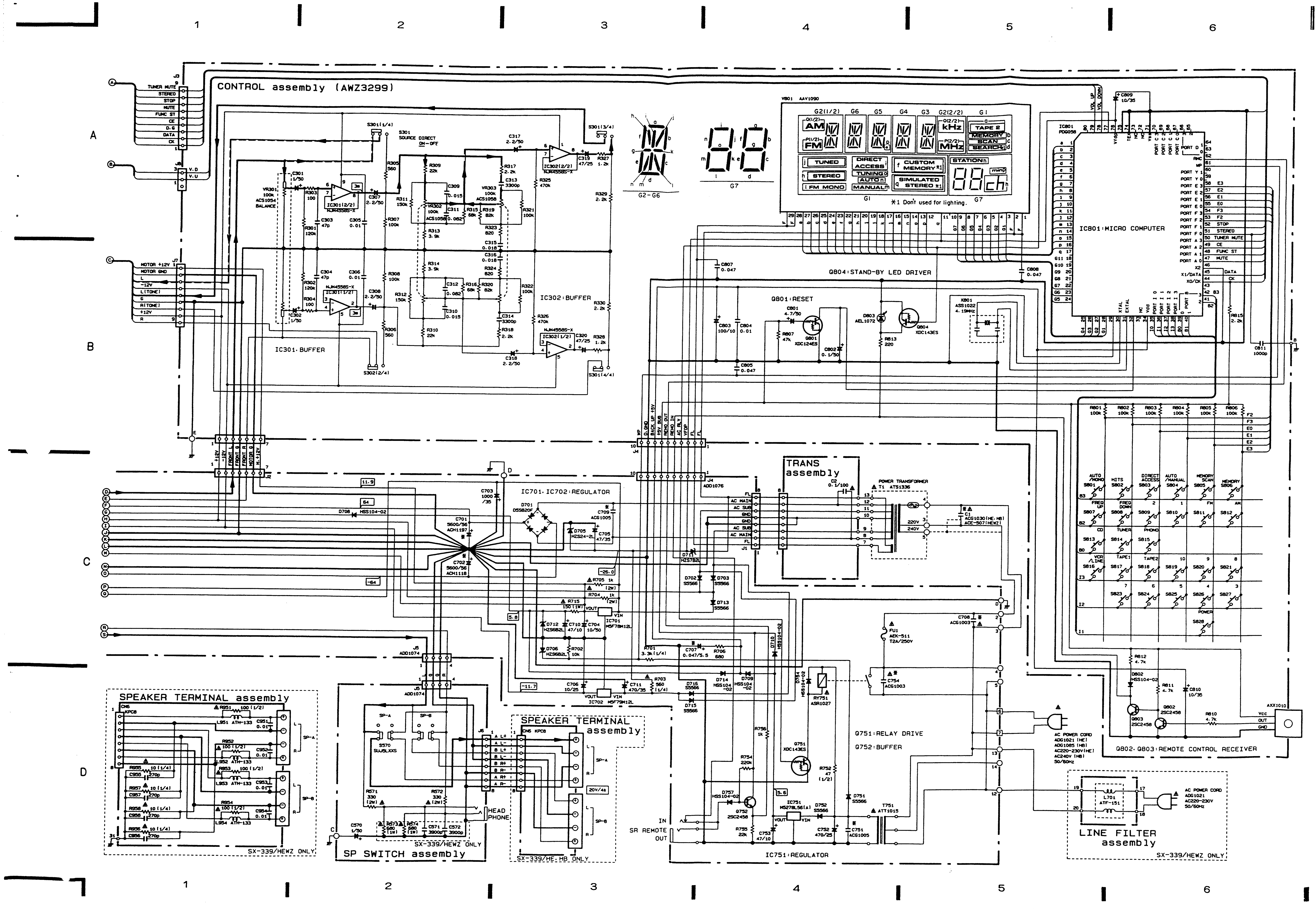


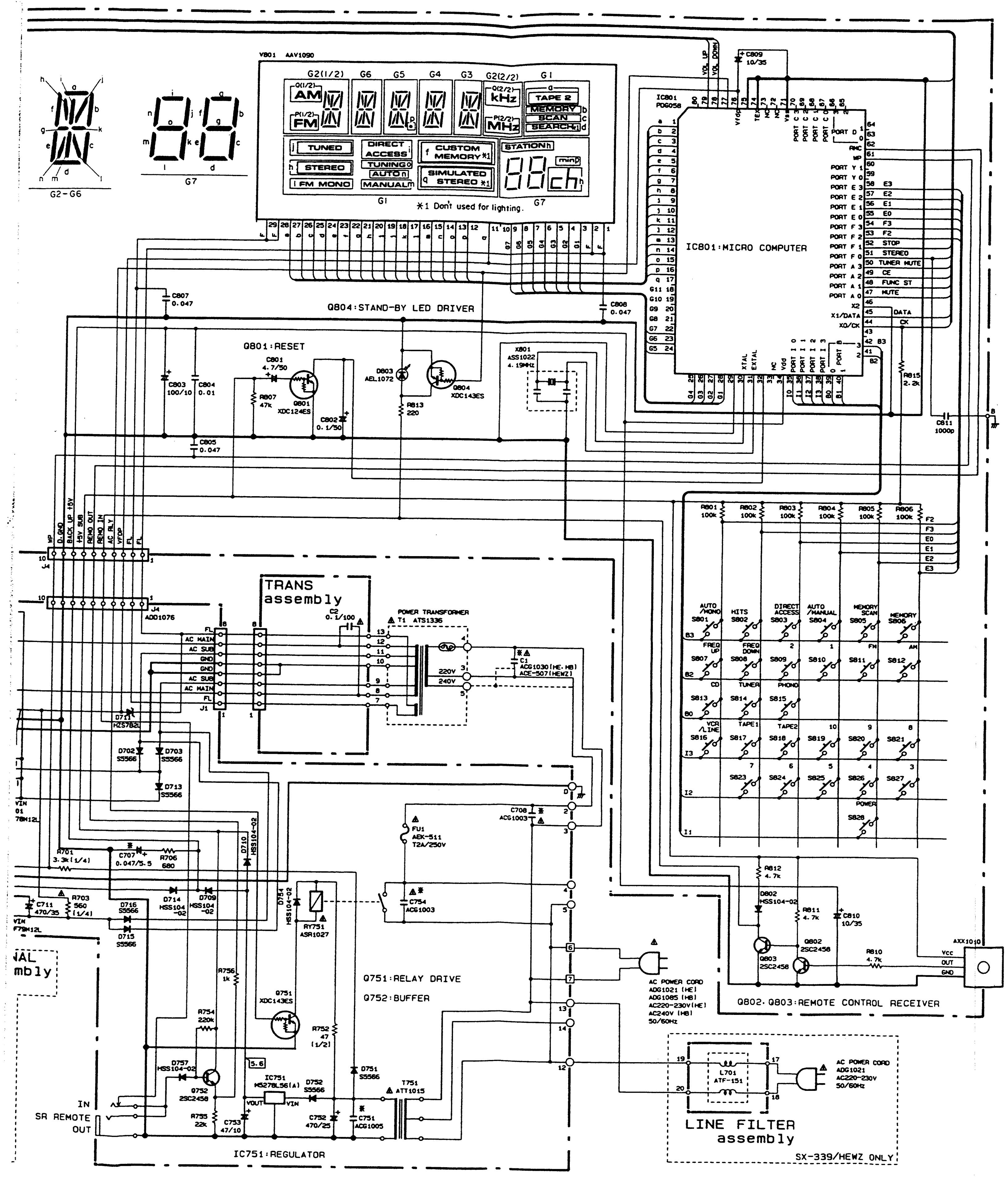
SP SWITCH assembly

J5
J6
AWZ
L
R
A
B
G
C



SP TERMINAL assembly


1
2
3
4
5
6
A
B
C
D
CONTROL assembly (AWZ3299)
J3
TUNER MUTE
STEREO
STOP
MUTE
FUNC ST
CE
D.6
DATA
CK
J6
V.D
V.U
J7
MOTOR +12V
MOTOR GND
L
-12V
L(TONE)
G
R(TONE)
+12V
R
S301(1/4)
S301 SOURCE DIRECT ON - OFF
S301(3/4)
S302(2/4)
S301(4/4)
VR301 100k ACS1054 BALANCE
IC301(2/2) NJM4558S-X
IC301(1/2) NJM4558S-X
IC301: BUFFER
IC302(2/2) NJM4558S-X
IC302(1/2) NJM4558S-X
IC302: BUFFER
VR302 100k ACS1058
VR303 100k ACS1058
G2-G6
G7
V801 AAV1090
G2(1/2)
G6
G5
G4
G3
G2(2/2)
G1
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
STEREO
FM MONO
DIRECT ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY *1
SIMULATED STEREO *1
STATION
ch
*1 Don't used for lighting.
IC801 PD6056
IC801: MICRO COMPUTER
VOL UP
VOL DOWN
C809 10/35
Q804: STAND-BY LED DRIVER
Q801: RESET
Q801 XDC124ES
D803 AEL1072
Q804 XDC143ES
X801 ASS1022 4.19MHz
C811 1000p
R801 100k
R802 100k
R803 100k
R804 100k
R805 100k
R806 100k
AUTO /MONO S801
HITS S802
DIRECT ACCESS S803
AUTO /MANUAL S804
MEMORY SCAN S805
MEMORY S806
FREQ UP S807
FREQ DOWN S808
S809
S810
FM S811
AM S812
CD S813
TUNER S814
PHONO S815
VCR /LINE S816
TAPE1 S817
TAPE2 S818
S819
S820
S821
S823
S824
S825
S826
S827
POWER S828
J4
J2
J5 ADD1074
J4 ADD1076
TRANS assembly
POWER TRANSFORMER T1 ATS1336
220V
240V
C1 ACG1030 (HE, HB) ACE-507 (HEWZ)
IC701, IC702: REGULATOR
D701 DSS820F
D705 HZS24-2L
D711 HZS7B2L
IC701 M5F78M12L
IC702 M5F79M12L
D712 HZS6B2L
D706 HZS6B2L
D708 HSS104-02
C701 5600/56 ACH1197
C702 5600/56 ACH1118
C703 1000/35
FU1 AEK-511 T2A/250V
C708 ACG1003
C754 ACG1003
RY751 ASR1027
Q751: RELAY DRIVE
Q752: BUFFER
Q751 XDC143ES
Q752 2SC2458
IC751 M5278L56(A)
IC751: REGULATOR
T751 ATT1015
IN
SR REMOTE
OUT
AC POWER CORD ADG1021 (HE) ADG1085 (HB) AC220-230V (HE) AC240V (HB) 50/60Hz
Q802, Q803: REMOTE CONTROL RECEIVER
Q802 2SC2458
Q803 2SC2458
AXX1010
Vcc
OUT
GND
LINE FILTER assembly
L701 ATF-151
AC POWER CORD ADG1021 AC220-230V 50/60Hz
SX-339/HEWZ ONLY
SPEAKER TERMINAL assembly
CN5 KPC8
L951 ATH-133
L952 ATH-133
L953 ATH-133
L954 ATH-133
SP-A
SP-B
SX-339/HEWZ ONLY
SP SWITCH assembly
S570 SUU5LXXS
HEAD PHONE
SX-339/HEWZ ONLY
SPEAKER TERMINAL assembly
CN5 KPC8
20V/4a
SX-339/HE, HB ONLY


V801 AAV1090
G2(1/2) G6 G5 G4 G3 G2(2/2) G1
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
STEREO
FM MONO
DIRECT ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY *1
SIMULATED STEREO *1
STATION
min
ch
*1 Don't used for lighting.
G2-G6
G7
IC801 PD6058
IC801:MICRO COMPUTER
Q804:STAND-BY LED DRIVER
Q801:RESET
X801 ASS1022 4.19MHz
D803 AEL1072
Q804 XDC143ES
Q801 XDC124ES
TRANS assembly
POWER TRANSFORMER T1 ATS1336
C1 ACG1030(HE, HB) ACE-507(HEWZ)
220V
240V
AC MAIN
AC SUB
GND
J1
J4 ADD1076
FU1 AEK-511 T2A/250V
RY751 ASR1027
Q751:RELAY DRIVE
Q752:BUFFER
Q751 XDC143ES
Q752 2SC2458
IC751 M5278L56(A)
IC751:REGULATOR
T751 ATT1015
SR REMOTE IN
SR REMOTE OUT
AC POWER CORD ADG1021 (HE) ADG1085 (HB) AC220-230V(HE) AC240V (HB) 50/60Hz
L701 ATF-151
LINE FILTER assembly
AC POWER CORD ADG1021 AC220-230V 50/60Hz
SX-339/HEWZ ONLY
AUTO/MONO S801
HITS S802
DIRECT ACCESS S803
AUTO/MANUAL S804
MEMORY SCAN S805
MEMORY S806
FREQ UP S807
FREQ DOWN S808
S809 S810 S811 S812
CD S813
TUNER S814
PHONO S815
VCR/LINE S816
TAPE1 S817
TAPE2 S818
S819 S820 S821 S823 S824 S825 S826 S827
POWER S828
Q802 HSS104-02
Q802 2SC2458
Q803 2SC2458
AXX1010
Vcc
OUT
GND
Q802, Q803:REMOTE CONTROL RECEIVER

1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
▭ : Signal voltage at (85 W + 85 W 8Ω)output (1kHz)
▭ : DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

SP SWITCH assembly

S570	SP A ON-OFF / SP B ON-OFF

CONTROL assembly

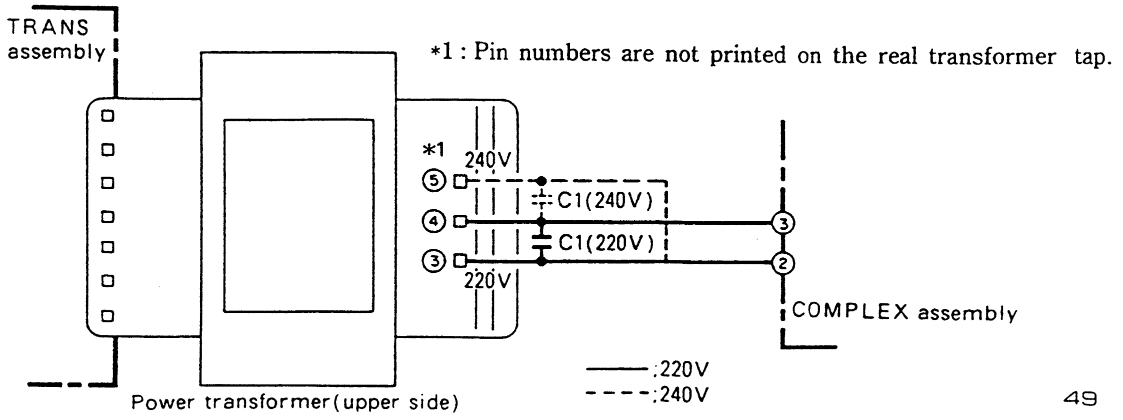
S801	FM MODE AUTO/MONO
S802	HITS
S803	DIRECT ACCESS
S804	FM TUNING AUTO/MANUAL
S805	MEMOLY SCANS
S806	MEMOLY
S807	FREQ UP
S808	FREQ DOWN
S809	2
S810	1
S811	FM
S812	AM
S813	CD
S814	TUNER
S815	PHONO
S816	VCR/LINE
S817	TAPE 1/DAT
S818	TAPE 2/ADAPTOR
S819	10
S820	9
S821	8
S823	7
S824	6
S825	5
S826	4
S827	3
S828	POWER STANDBY / ON
S301	DIRECT ON/OFF

Line voltage selection (For HE, HB and HEWZ types)

Line voltage can be changed with the following steps.

1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary taps.
4. Change the connection to the capacitor (C1) on the primary side of the power transformer.
5. Stick the line voltage label on the rear panel.

Part No.	Description
AAX−193	220V label
AAX−192	240V label


TRANS assembly
*1
240V
220V
⑤
④
③
C1(240V)
C1(220V)
③
②
COMPLEX assembly
——:220V
- - - -:240V

*1 : Pin numbers are not printed on the real transformer tap.

Power transformer(upper side)

3. PCB's PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56×10^1 561........................RD1/4PS $\boxed{5}\,\boxed{6}\,\boxed{1}$ *J*
47kΩ 47×10^3 473........................RD1/4PS $\boxed{4}\,\boxed{7}\,\boxed{3}$ *J*
0.5Ω 0R5..RN2H $\boxed{0}\,\boxed{R}\,\boxed{5}$ *K*
1Ω 010..RS1P $\boxed{0}\,\boxed{1}\,\boxed{0}$ *K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562×10^1 5621........................RN1/4SR $\boxed{5}\,\boxed{6}\,\boxed{2}\,\boxed{1}$ *F*

3.1 FOR SX – 229

Mark	No.	Description	Parts No.
CONTROL ASSEMBLY (AWZ3307)			
SEMICONDUCTORS			
	IC301, 302	OP – AMP IC	NJM4558S – X
	IC801	RECEIVER CONTROL	PDG049 – B
	IC971	OP – AMP IC	NJM4558S – X
	Q801	TRANSISTOR	XDC124ES
SWITCHES			
	S301	PUSH SWITCH	ASG1036
	S801, 803	SWITCH	ASG1034
	S804 – 821	SWITCH	ASG1034
	S823 – 827	SWITCH	ASG1034
CAPACITORS			
	C301, 302	ELECTR.CAPACITOR	CEAS010M50
	C303, 304	CERAMIC CAPACITOR	CCCSL470J50
	C305, 306	CERAMIC CAPACITOR	CKDYF103Z50
	C307, 308	ELECTR.CAPACITOR	CEAS2R2M50
	C309, 310	AUDIO FILM CAPACITOR	CFTXA153J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA823J50
	C313, 314	MYLOR FILM CAPACITOR	CQMA332K50
	C315, 316	AUDIO FILM CAPACITOR	CFTXA183J50
	C317, 318	ELECTR.CAPACITOR	CEAS2R2M50
	C319, 320	ELECTR.CAPACITOR	CEAS470M25
	C801	ELECTROLYTIC CAPACIT	CEJA4R7M50
	C802	ELECTROLYTIC CAPACIT	CEJA0R1M50
	C803	ELECTR.CAPACITOR	CEJA221M6
	C804	CERAMIC CAPACITOR	CKDYF103Z50
	C805, 807	CERAMIC CAPACITOR	CKDYF473Z50
	C808	CERAMIC CAPACITOR	CKDYF473Z50
	C809, 810	ELECTROLYTIC CAPACIT	CEJA100M35
	C811	CERAMIC CAPACITOR	CKPUYB102K50
	C973	ELECTROLYTIC CAPACIT	CEJA4R7M50
	C974	ELECTR.CAPACITOR	CEAS4R7M50
	C975, 976	CERAMIC CAPACITOR	CCCSL220J50
	C977, 978	CERAMIC CAPACITOR	CKDYF103Z50
RESISTORS			
	VR301	VARIABLE RESISTOR	ACS1054
	VR302, 303	VARIABLE RESISTOR	ACS1058
	VR907	VARIABLE(50k – A5X2)	ACT1066
	R981, 982	CARBON FILM RESISTOR	RDR1/4PM471J
		Others resistors	RD1/8PM□□□J
OTHERS			
		FL SPACER	AEB1120
	V801	FL TUBE	AAV1090
	X801	CERAMIC OSCILLATOR	ASS1022

TRANS ASSEMBLY

CAPACITORS

Mark No.	Description	Parts No.
C2	POLYESTER CAPACITOR	CQMXA104J100

SP TERMINAL ASSEMBLY

OTHERS

Mark No.	Description	Parts No.
	SPEAKER TERMINAL 8−P	AKE−111

COMPLEX ASSEMBLY (AWZ3315)

SEMICONDUCTORS

Mark No.	Description	Parts No.
IC111	AM/FM IC	LA1265S
IC131	PLL IC	LM7001
IC151	MPX IC	AN7470P
IC201	OP−AMP IC	RC4558DXP
IC202	E−SW IC	TC9164N
IC253	OP−AMP IC	NJM4558S−X
IC701	REGULATOR IC	M5F78M12L
IC702	REGULATOR IC	M5F79M12L
Q101	TRANSISTOR	2SC2668
Q102, 103	TRANSISTOR	XDA143ES
Q131	N−FET	2SK246
Q132	TRANSISTOR	2SC1740SLN
Q133, 151	TRANSISTOR	2SC1740S
Q152	TRANSISTOR	2SC1740S
Q153	TRANSISTOR	2SA1048
Q261, 262	TRANSISTOR	XDC124ES
Q263	TRANSISTOR	XDA124ES
Q501−504	TRANSISTOR	2SA992
Q513, 514	TRANSISTOR	2SC1845
Q521, 522	TRANSISTOR	2SA1145
Q523, 524	TRANSISTOR	2SC2705
Q525, 526	TRANSISTOR	2SC2603
Q551, 552	TRANSISTOR	2SC3298
Q553, 554	TRANSISTOR	2SA1306
Q601, 602	TRANSISTOR	2SC2458
Q603	TRANSISTOR	2SA1048
Q604	TRANSISTOR	2SC2458
Q605	TRANSISTOR	XDC124ES
Q606	TRANSISTOR	XDC143ES
D111−115	DIODE	HSS104−02
D513, 514	DIODE	HSS104−02
D521−524	DIODE	HSS104−02
D561	DIODE	HSS104−02
D601	ZENER DIODE	HZS12AL
D701	DIODE	RBV402
D702, 703	DIODE	S5566
D705	ZENER DIODE	HZS24−2L
D706	ZENER DIODE	HZS6B2L
D708−710	DIODE	HSS104−02
D711	ZENER DIODE	HZS7B2L
D712	ZENER DIODE	HZS6B2L
D713, 715	DIODE	S5566
D716	DIODE	S5566

RELAY

Mark No.	Description	Parts No.
RY561	RELAY	ASR1038

COILS

Mark No.	Description	Parts No.
F101, 102	CERAMIC FILTER	ATF−126
F111	CERAMIC FILTER	ATF−208
L111	COIL	ATE−079
L112, 131	AXIAL INDUCTOR	LAU2R2M
L561, 562	COIL	ATH1004

CAPACITORS

Mark No.	Description	Parts No.
C101−104	CERAMIC CAPACITOR	ACG1021
C105, 106	CERAMIC CAPACITOR	CKDYF223Z50
C107	CERAMIC CAPACITOR	CKDYF473Z50
C109	CERAMIC CAPACITOR	CKDYX104M25
C111, 112	CERAMIC CAPACITOR	CKDYF223Z50
C113	ELECTR.CAPACITOR	CEAS330M16
C114	CERAMIC CAPACITOR	ACG1021
C115	CERAMIC CAPACITOR	CKDYF103Z50
C116	ELECTR.CAPACITOR	CEAS010M50
C117	CERAMIC CAPACITOR	ACG1018
C118	CERAMIC CAPACITOR	CKDYX103M25
C119	ELECTR.CAPACITOR	CEAS100M50
C120	ELECTR.CAPACITOR	CEAS2R2M50
C121	CERAMIC CAPACITOR	CKDYF222Z50
C122	CERAMIC CAPACITOR	CKDYF473Z50
C123	ELECTR.CAPACITOR	CEAS4R7M50
C124	ELECTR.CAPACITOR	CEAS470M10
C125, 130	CERAMIC CAPACITOR	ACG1021
C131, 132	CERAMIC CAPACITOR	CCDCH150J50
C133	CERAMIC CAPACITOR	ACG1021

Mark	No.	Description	Parts No.
	C134	CERAMIC CAPACITOR	CKDYF103Z50
	C135	CERAMIC CAPACITOR	ACG1016
	C136	ELECTR.CAPACITOR	CEAS330M16
	C137	AUDIO FILM CAPACITOR	CFTXA224J50
	C138, 139	CERAMIC CAPACITOR	ACG1021
	C140	ELECTR.CAPACITOR	CEAS470M16
	C141	CERAMIC CAPACITOR	CKDYF473Z50
	C151	ELECTR.CAPACITOR	CEANP4R7M35
	C152	CERAMIC CAPACITOR	CKDYF473Z50
	C153, 154	MYLOR FILM CAPACITOR	CQMA102J50
	C155, 156	ELECTR.CAPACITOR	CEAS4R7M50
	C157, 158	CERAMIC CAPACITOR	CKDYB182K50
	C159	ELECTR.CAPACITOR	CEAS470M16
	C160	CERAMIC CAPACITOR	ACG1021
	C161	ELECTR.CAPACITOR	CEASR22M50
	C162	ELECTROLYTIC CAPACIT	CEAS1R5M50
	C163	ELECTR.CAPACITOR	CEAS3R3M50
	C164	CAPACITOR	ACE1039
	C167	CERAMIC CAPACITOR	CCCSL101J50
	C201	ELECTR.CAPACITOR	CEAS010M50
	C231, 232	ELECTR.CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTROLYTIC CAPACIT	CEAS471M6
	C237, 238	AUDIO FILM CAPACITOR	CFTXA243J50
	C239, 240	AUDIO FILM CAPACITOR	CFTXA823J50
	C241, 242	ELECTR.CAPACITOR	CEAS2R2M50
	C243, 244	CERAMIC CAPACITOR	CKDYF103Z50
	C245, 246	ELECTR.CAPACITOR	CEAS470M16
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR.CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR.CAPACITOR	CEAS4R7M50
	C256, 257	CERAMIC CAPACITOR	CKDYF103Z50
	C501, 502	ELECTR.CAPACITOR	CEAS2R2M50
	C503, 504	MYLOR FILM CAPACITOR	CQMA102J50
	C505, 506	CERAMIC CAPACITOR	CKMYB681K50
	C508	ELECTR.CAPACITOR	CEAS101M16
	C509−512	CERAMIC CAPACITOR	CCMSL470J50
	C521, 522	ELECTR.CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL080D500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C529, 530	ELECTR.CAPACITOR	CEAS101M10
	C551−554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	AUDIO FILM CAPACITOR	CFTXA473J50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	CERAMIC CAPACITOR	CKDYF103Z50
	C603	ELECTR.CAPACITOR	CEAS101M16
	C605	ELECTR.CAPACITOR	CEAS4R7M50
	C701	ELECTROLYTIC CAPACIT	ACH1119
	C702	ELECTROLYTIC CAPACIT	ACH1195
	C703	ELECTROLYTIC CAPACIT	CEAS102M35
	C704	ELECTR.CAPACITOR	CEAS100M50
	C705	ELECTROLYTIC CAPACIT	CEAS470M35
	C706	ELECTR.CAPACITOR	CEAS100M25
	C707	CEA (47000/5.5V)	ACH1037
	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTR.CAPACITOR	CEAS470M10
	C711	ELECTROLYTIC CAPACIT	CEAS471M35
RESISTORS			
	VR151	VR	ACP1042
	R501, 502	CARBON FILM RESISTOR	RDR1/6PU561J
⚠	R513−516	FUSIBLE RESISTOR	RFA1/4PS391J
	R521, 522	CARBON FILM RESISTOR	RDR1/6PU822J
	R523, 524	CARBON FILM RESISTOR	RDR1/6PU104J
	R525, 526	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R529, 530	FUSIBLE RESISTOR	RFA1/4PS101J
	R545, 546	METALFILM RESISTER	RN1/4PQ1501F
⚠	R551−554	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R555−558	CARBON FILM RESISTOR	RD1/4PMF101J

Mark	No.	Description	Parts No.
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1063
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R565, 566	METAL OXIDE RESISTOR	RS1LMF100J
⚠	R608	CARBON FILM RESISTOR	RD1/4PMF221J
⚠	R610	FUSIBLE RESISTOR	RFA1/4PS100J
	R701	CARBON FILM RESISTOR	RD1/4PM332J
⚠	R703	METAL OXIDE RESISTOR	RS2LMF152J
⚠	R704, 705	METAL OXIDE RESISTOR	RS2LMF911J
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
		Others resistor	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Parts No.
		ANTENNA TERMINAL 4–P	AKA1010
		PIN JACK (4P)	AKB1101
		PIN JACK (6P)	AKB1121
		2 SERIAL F.E. MODULE ASSEMBLY	AXQ1002
		AM RF TUNING BLOCK	AXX1011
	X131	CRYSTAL RESONATOR	ASS1005

SP SWITCH ASSEMBLY

SWITCHES

Mark	No.	Description	Parts No.
⚠	S1	POWER SWITCH	ASG1027
	S570	PUSH SWITCH	ASG1017
	S571	PUSH SWITCH	ASG1026

CAPACITORS

Mark	No.	Description	Parts No.
	C570	ELECTR.CAPACITOR	CEAS010M50
⚠	C574	CKA (0.01/AC400V)	ACG1002

RESISTORS

Mark	No.	Description	Parts No.
⚠	R571, 572	METAL OXIDE RESISTOR	RS2LMF331J

OTHERS

Mark	No.	Description	Parts No.
		JACK	AKN1002

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SP SWITCH ASSEMBLY

SWITCH

Mark	No.	Description	Parts No.
	S570	PUSH SWITCH	SUJ5LXXS

CAPACITOR

Mark	No.	Description	Parts No.
	C570	ELECTR.CAPACITOR	CEAS010M50

RESISTORS

Mark	No.	Description	Parts No.
⚠	R571, 572	METAL OXIDE RESISTOR	RS2LMF331J

OTHERS

Mark	No.	Description	Parts No.
		JACK	AKN1002

CONTROL ASSEMBLY (AWZ3299)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC301, 302	OP－AMP IC	NJM4558S－X
	IC801	AMP CONTROL UCOM	PDG058
	Q801	TRANSISTOR	XDC124ES
	Q802, 803	TRANSISTOR	2SC2458
	Q804	TRANSISTOR	XDC143ES
	D802	DIODE	HSS104－02
	D803	LED	AEL1072

SWITCHES

Mark	No.	Description	Parts No.
	S301	PUSH SWITCH	ASG1036
	S801－821	SWITCH	ASG1034
	S823－828	SWITCH	ASG1034

CAPACITORS

Mark	No.	Description	Parts No.
	C301, 302	ELECTR.CAPACITOR	CEAS010M50
	C303, 304	CERAMIC CAPACITOR	CCCSL470J50
	C305, 306	CERAMIC CAPACITOR	CKDYF103Z50
	C307, 308	ELECTR.CAPACITOR	CEAS2R2M50
	C309, 310	AUDIO FILM CAPACITOR	CFTXA153J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA823J50
	C313, 314	MYLOR FILM CAPACITOR	CQMA332K50
	C315, 316	AUDIO FILM CAPACITOR	CFTXA183J50
	C317, 318	ELECTR.CAPACITOR	CEAS2R2M50
	C319, 320	ELECTR.CAPACITOR	CEAS470M25
	C801	ELECTROLYTIC CAPACIT	CEJA4R7M50
	C802	ELECTROLYTIC CAPACIT	CEJA0R1M50
	C803	ELECTROLYTIC CAPACIT	CEJA101M10
	C804	CERAMIC CAPACITOR	CKDYF103Z50
	C805, 807	CERAMIC CAPACITOR	CKDYF473Z50
	C808	CERAMIC CAPACITOR	CKDYF473Z50
	C809, 810	ELECTROLYTIC CAPACIT	CEJA100M35
	C811	CERAMIC CAPACITOR	CKPUYB102K50

RESISTORS

Mark	No.	Description	Parts No.
	VR301	VARIABLE RESISTOR	ACS1054
	VR302, 303	VARIABLE RESISTOR	ACS1058
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	V801	FL TUBE	AAV1090
	X801	CERAMIC OSCILLATOR	ASS1022
		FL SPACER	AEB1120
		REMOTE RECEIVER UNIT	AXX1010

TRANS ASSEMBLY

CAPACITORS

Mark	No.	Description	Parts No.
	C2	POLYESTER CAPACITOR	CQMXA104J100

COMPLEX ASSEMBLY (AWZ3312)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC111	AM/FM IC	LA1265S
	IC131	PLL IC	LM7001
	IC151	MPX IC	AN7470P
	IC201	OP－AMP IC	RC4558DXP
	IC202	E－SW IC	TC9164N
	IC253	OP－AMP IC	NJM4558S－X
	IC701	REGULATOR IC	M5F78M12L
	IC702	REGULATOR IC	M5F79M12L
	IC751	REGULATOR IC	M5278L56 (A)
	Q101	TRANSISTOR	2SC2668
	Q102, 103	TRANSISTOR	XDA143ES
	Q131	N－FET	2SK246
	Q132	TRANSISTOR	2SC1740SLN
	Q133, 151	TRANSISTOR	2SC1740S
	Q152	TRANSISTOR	2SC1740S
	Q153	TRANSISTOR	2SA1048
	Q261, 262	TRANSISTOR	XDC124ES
	Q501－504	TRANSISTOR	2SA992
	Q513, 514	TRANSISTOR	2SC1845
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q551, 552	TRANSISTOR	2SC3298
	Q553, 554	TRANSISTOR	2SA1306
	Q601, 602	TRANSISTOR	2SC2458

Mark	No.	Description	Parts No.
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2458
	Q605	TRANSISTOR	XDC124ES
	Q606	TRANSISTOR	XDC143ES
	Q621, 622	TRANSISTOR	2SC2240
	Q751	TRANSISTOR	XDC143ES
	Q752	TRANSISTOR	2SC2458
	D111–115	DIODE	HSS104–02
	D513, 514	DIODE	HSS104–02
	D521–524	DIODE	HSS104–02
	D561	DIODE	HSS104–02
	D601	ZENER DIODE	HZS12AL
	D621–626	DIODE	HSS104–02
	D701	DIODE	D5SB20F
	D702, 703	DIODE	S5566
	D705	ZENER DIODE	HZS24–2L
	D706	ZENER DIODE	HZS6B2L
	D708–710	DIODE	HSS104–02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713	DIODE	S5566
	D714	DIODE	HSS104–02
	D715, 716	DIODE	S5566
	D751, 752	DIODE	S5566
	D754, 757	DIODE	HSS104–02

RELAY

Mark	No.	Description	Parts No.
	RY561	RELAY	ASR1037
⚠	RY751	RELAY	ASR1027

COILS & TRANSFORMER

Mark	No.	Description	Parts No.
	L111	COIL	ATE–079
	L112, 131	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1004
	F101, 102	CERAMIC FILTER	ATF–126
	F111	CERAMIC FILTER	ATF–208
⚠	T751	POWER TRANSFORMER	ATT1015

CAPACITORS

Mark	No.	Description	Parts No.
	C101–104	CERAMIC CAPACITOR	ACG1021
	C105, 106	CERAMIC CAPACITOR	CKDYF223Z50
	C107	CERAMIC CAPACITOR	CKDYF473Z50
	C109	CERAMIC CAPACITOR	CKDYX104M25
	C111, 112	CERAMIC CAPACITOR	CKDYF223Z50
	C113	ELECTR.CAPACITOR	CEAS330M16
	C114	CERAMIC CAPACITOR	ACG1021
	C115	CERAMIC CAPACITOR	CKDYF103Z50
	C116	ELECTR.CAPACITOR	CEAS010M50
	C117	CERAMIC CAPACITOR	ACG1018
	C118	CERAMIC CAPACITOR	CKDYX103M25
	C119	ELECTR.CAPACITOR	CEAS100M50
	C120	ELECTR.CAPACITOR	CEAS2R2M50
	C121	CERAMIC CAPACITOR	CKDYF222Z50
	C122	CERAMIC CAPACITOR	CKDYF473Z50
	C123	ELECTR.CAPACITOR	CEAS4R7M50
	C124	ELECTR.CAPACITOR	CEAS470M10
	C125, 130	CERAMIC CAPACITOR	ACG1021
	C131, 132	CERAMIC CAPACITOR	CCDCH150J50
	C133	CERAMIC CAPACITOR	ACG1021
	C134	CERAMIC CAPACITOR	CKDYF103Z50
	C135	CERAMIC CAPACITOR	ACG1016
	C136	ELECTR.CAPACITOR	CEAS330M16
	C137	AUDIO FILM CAPACITOR	CFTXA224J50
	C138, 139	CERAMIC CAPACITOR	ACG1021
	C140	ELECTR.CAPACITOR	CEAS470M16
	C141	CERAMIC CAPACITOR	CKDYF473Z50
	C151	ELECTR.CAPACITOR	CEANP4R7M35
	C152	CERAMIC CAPACITOR	CKDYF473Z50
	C153, 154	MYLOR FILM CAPACITOR	CQMA102J50
	C155, 156	ELECTR.CAPACITOR	CEAS4R7M50
	C157, 158	CERAMIC CAPACITOR	CKDYB182K50
	C159	ELECTR.CAPACITOR	CEAS470M16
	C160	CERAMIC CAPACITOR	ACG1021
	C161	ELECTR.CAPACITOR	CEASR22M50
	C162	ELECTROLYTIC CAPACIT	CEAS1R5M50
	C163	ELECTR.CAPACITOR	CEAS3R3M50
	C164	CAPACITOR	ACE1039
	C167	CERAMIC CAPACITOR	CCCSL101J50
	C201	ELECTR.CAPACITOR	CEAS010M50
	C231, 232	ELECTR.CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTROLYTIC CAPACIT	CEAS471M6
	C237, 238	AUDIO FILM CAPACITOR	CFTXA243J50
	C239, 240	AUDIO FILM CAPACITOR	CFTXA823J50

Mark	No.	Description	Parts No.
	C241, 242	ELECTR.CAPACITOR	CEAS2R2M50
	C243, 244	CERAMIC CAPACITOR	CKDYF103Z50
	C245, 246	ELECTR.CAPACITOR	CEAS470M16
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR.CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR.CAPACITOR	CEAS4R7M50
	C256, 257	CERAMIC CAPACITOR	CKDYF103Z50
	C501, 502	ELECTR.CAPACITOR	CEAS2R2M50
	C503, 504	MYLOR FILM CAPACITOR	CQMA102J50
	C505, 506	CERAMIC CAPACITOR	CKDYF222Z50
	C508	ELECTR.CAPACITOR	CEAS101M16
	C509−512	CERAMIC CAPACITOR	CCMSL470J50
	C521, 522	ELECTR.CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL080D500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C529, 530	ELECTR.CAPACITOR	CEAS101M10
	C551−554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	AUDIO FILM CAPACITOR	CFTXA473J50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	CERAMIC CAPACITOR	CKDYF103Z50
	C603	ELECTR.CAPACITOR	CEAS101M16
	C605	ELECTR.CAPACITOR	CEAS4R7M50
	C621, 622	ELECTR.CAPACITOR	CEANP2R2M50
	C701	ELECTROLYTIC CAPACIT	ACH1197
	C702	ELECTROLYTIC CAPACIT	ACH1118
	C703	ELECTROLYTIC CAPACIT	CEAS102M35
	C704	ELECTR.CAPACITOR	CEAS100M50
	C705	ELECTROLYTIC CAPACIT	CEAS470M35
	C706	ELECTR.CAPACITOR	CEAS100M25
	C707	CEA (47000/5.5V)	ACH1037−A−S
⚠	C708	CKA (0.01/AC400V)	ACG1003
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTR.CAPACITOR	CEAS470M10
	C711	ELECTROLYTIC CAPACIT	CEAS471M35
	C751	CKA (0.01/AC250V)	ACG1005
	C752	ELECTROLYTIC CAPACIT	CEAS471M25
	C753	ELECTR.CAPACITOR	CEAS470M10
⚠	C754	CKA (0.01/AC400V)	ACG1003
RESISTORS			
	VR151	VR	ACP1042
	R501, 502	CARBON FILM RESISTOR	RDR1/4PM561J
⚠	R513−516	FUSIBLE RESISTOR	RFA1/4PS391J
	R521, 522	CARBON FILM RESISTOR	RDR1/4PM682J
	R523, 524	CARBON FILM RESISTOR	RDR1/4PM104J
	R525, 526	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R529, 530	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R551−554	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R555−558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1063
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R565, 566	METAL OXIDE RESISTOR	RS1LMF100J
⚠	R608	CARBON FILM RESISTOR	RD1/4PMF221J
⚠	R610	FUSIBLE RESISTOR	RFA1/4PS100J
⚠	R621, 622	CARBON FILM RESISTOR	RD1/4PMF222J
⚠	R625	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R631, 632	CARBON FILM RESISTOR	RD1/4PMF222J
	R701	CARBON FILM RESISTOR	RD1/4PM332J
⚠	R703	CARBON FILM RESISTOR	RD1/4PMF561J
⚠	R704, 705	METAL OXIDE RESISTOR	RS2LMF102J
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
	R752	CARBON FILM RESISTOR	RD1/2PM470J
	Other resistors		RD1/8PM□□□J
OTHERS			
		ANTENNA TERMINAL 4−P	AKA1010
		PIN JACK (4P)	AKB1101
		PIN JACK (6P)	AKB1121
		JACK	AKN1006
		3 Serial F.E. MODULE ASSEMBLY	AXQ1003
		AM RF TUNING BLOCK	AXX1011
	CN12	JUMPER CONNECTOR	KPC8
	CN13	CONNECTOR (7P)	KPC7
	X131	CRYSTAL RESONATOR	ASS1005

Mark	No.	Description	Parts No.
MOTOR VOL ASSEMBLY			
SEMICONDUCTOR			
	IC970	MECHANISM DRIVER IC	TA7291S
	IC971	OP−AMP IC	NJM4558S−X
COILS			
	L970, 971	AXIAL INDUCTOR	LAU220K
CAPACITORS			
	C970	ELECTROLYTIC CAPACIT	CEAS470M35
	C971	CERAMIC CAPACITOR	CKDYX473M25
	C972	CERAMIC CAPACITOR	CKDYF473Z50
	C973, 974	ELECTR.CAPACITOR	CEAS4R7M50
	C975, 976	CERAMIC CAPACITOR	CCDSL220J50
	C977, 978	CERAMIC CAPACITOR	CKDYF103Z50
RESISTORS			
	R981, 982	CARBON FILM RESISTOR	RDR1/6PU471J
	VR970	VARIABLE RESISTOR	ACX1040
		Other resistors	RD1/8PM□□□J
OTHERS			
	CN11	CONNECTOR (4P)	KPC4
	CN7	CONNECTOR (9P)	KPC9
TRANSISTOR ASSEMBLY			
SEMICONDUCTOR			
	Q901, 902	TRANSISTOR	2SC2603
RESISTORS			
	R905, 906	METALFILM RESISTER	RN1/4PQ1501F
		Other resistors	RD1/8PM□□□J
SP TERMINAL ASSEMBLY			
OTHERS			
	CN6	JUMPER CONNECTOR	KPC8
		SPEAKER TERMINAL (8P)	AKE−111

4. ADJUSTMENTS

4.1 ADJUSTMENT OF THE FM TUNER SECTION

- Set the mode selector to FM BAND.
- Connect the wiring as shown in the Fig. 4−2.

<table>
<tr><th rowspan="2">Step No.</th><th rowspan="2">Adjustment title</th><th colspan="2">FM SG (1kHz ±75kHz dev.)</th><th rowspan="2">Reception frequency display</th><th rowspan="2">Adjustment location</th><th rowspan="2">Specifications</th></tr>
<tr><th>Frequency (MHz)</th><th>Level (dBμV)</th></tr>
<tr><td>1</td><td>Center adjustment</td><td>98.0</td><td>60</td><td>98.0MHz</td><td>L111</td><td>Adjust so that the DC voltage between the TP−21 and TP−22 becomes 0V±50mV.</td></tr>
<tr><td>2</td><td>VCO adjustment</td><td>98.0 (Non modulation)</td><td>60</td><td>98.0MHz</td><td>VR151</td><td>Adjust so that the output of the TP−23 becomes 76kHz ±0.5kHz.</td></tr>
<tr><td>3</td><td>TUNED IND. Lighting level</td><td>98.0[*1] (Stereo modulation)</td><td>—</td><td>98.0MHz</td><td>R121</td><td>The R121 of the COMPLEX assembly has been mounted or removed at the time of adjustment in the production.
Mount or remove R121 referring to the table below, and adjust it so that the indicators of TUNED start to light up at 24dBμV (±15dB).
<table>
<tr><th>Input level</th><th>R121</th></tr>
<tr><td>The indicators of TUNED start lighting up at a larger input than 39dBμV.</td><td>Remove</td></tr>
<tr><td>The indicators of TUNED start lighting up at a less input than 9dBμV.</td><td>Mount</td></tr>
</table></td></tr>
</table>

*1 Stereo modulation : Main 1kHz L+R ±68.25kHz dev.
Pilot 19kHz ±6.75kHz dev.

4.2 ADJUSTMENT OF THE AM TUNER SECTION

- Set the mode selector to AM BAND.
- Connect the wiring as shown in the Fig. 4−3.

<table>
<tr><th rowspan="2">Step No.</th><th rowspan="2">Adjustment title</th><th colspan="2">AM SG (400Hz 30% MOD.)</th><th rowspan="2">Reception frequency display</th><th rowspan="2">Adjustment location</th><th rowspan="2">Specifications</th></tr>
<tr><th>Frequency (kHz)</th><th>Level (dBμV)</th></tr>
<tr><td>1</td><td>TUNED IND. Lighting level</td><td>999</td><td>—</td><td>999kHz</td><td>R120</td><td>The R120 of the COMPLEX assembly has been mounted or removed at the time of adjustment in the production.
Mount or remove R120 referring to the table below, and adjust it so that the indicators of TUNED start to light up at less input than 65dBμV.
<table>
<tr><th>Input level</th><th>R120</th></tr>
<tr><td>The indicators of TUNED start lighting up at a larger input than 65dBμV/m.</td><td>Remove</td></tr>
</table></td></tr>
</table>

COMPLEX assembly

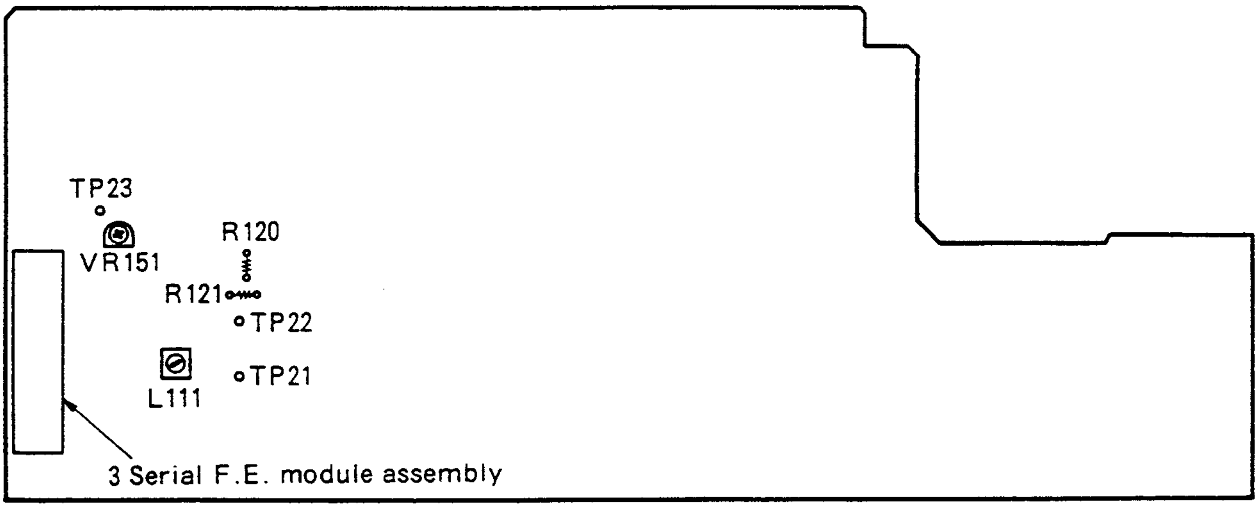

TP23
VR151
R120
R121
TP22
L111
TP21
3 Serial F.E. module assembly

Fig. 4－1　Adjustment point

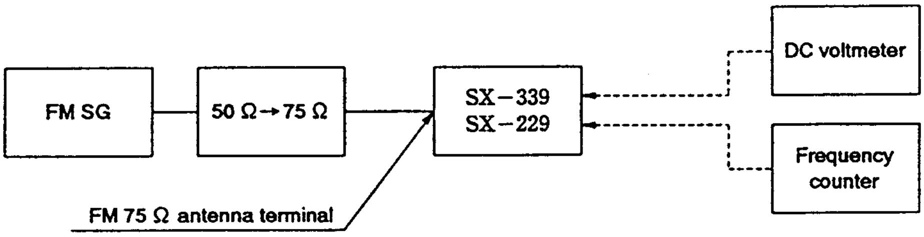

FM SG
50 Ω→75 Ω
SX－339
SX－229
DC voltmeter
Frequency counter
FM 75 Ω antenna terminal

Fig. 4－2　FM Adjustment Connection Diagram

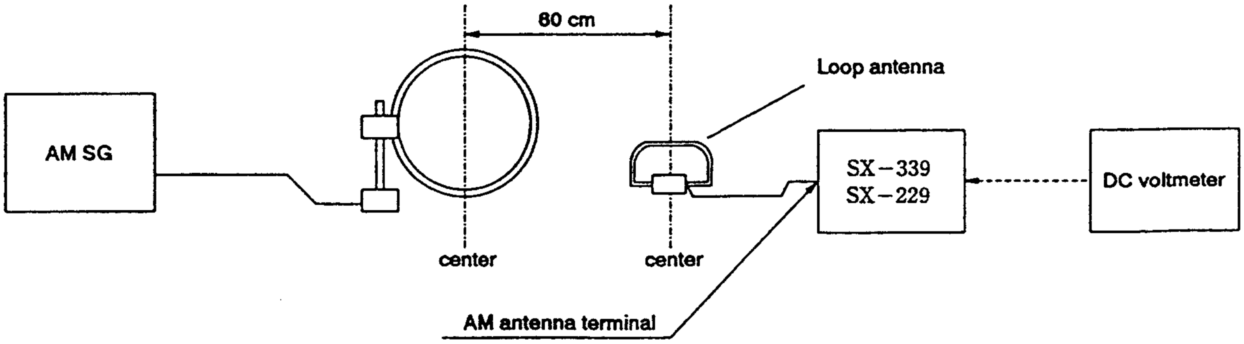

60 cm
Loop antenna
AM SG
SX－339
SX－229
DC voltmeter
center
center
AM antenna terminal

Fig. 4－3　AM Adjustment Connection Diagram

5. FOR SX–229/HB, YPW AND HEWZ TYPES

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

The SX–229/HB, YPW and HEWZ types are the same as the SX–229/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		SX–229/ HE type	SX–229/ HB type	SX–229/ YPW type	SX–229/ HEWZ type	
	COMPLEX assembly	AWZ3315	AWZ3315	AWZ3315	AWZ3313	
	SP SWITCH assembly	Non supply	Non supply	Non supply	Non supply	
	SP TERMINAL assembly	Non supply	Non supply	Non supply	Non supply	
⚠	C1 Power capacitor (0.022/AC400V)	ACG1030	ACG1030	ACG1030	....	
⚠	C1 Power capacitor (0.1/AC250V)	....	....	....	ACE–507	
⚠	AC Power cord	ADG1021	ADG1085	ADG–064	ADG1021	
	Plate	AAK1979	AAK1979	AAK1980	AAK1979	
	Screw (EARTH)	....	....	....	ABA1047	
	FM antenna	ADH1004	ADH1004	ADH1004	....	
	FM antenna assembly	....	....	....	ADH1002	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1182	....	....	....	
	Operating instructions (English)	....	ARB1292	ARB1292	....	
	Operating instructions (German)	....	....	....	ARC1250	

SP TERMINAL assembly (HEWZ type)

The SP TERMINAL assembly (HEWZ type) is the same as the SP TERMINAL assembly (HE type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C951–C954	....	CKDYF103Z50	
	C955–C958	....	CKDYB681K50	
	L951–L954	....	ATH–133	
⚠	R951–R954	....	RD1/2PMF101J	
⚠	R955, R956	....	RD1/4PMF100J	

COMPLEX assembly (AWZ3313)

The COMPLEX assembly (AWZ3313) is the same as the COMPLEX assembly (AWZ3315) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3315	AWZ3313	
	Q111	....	2SC1740S	
	F101, F102	ATF−126	....	
	F101	....	ATF−119	
	F102	....	ATF−107	
	F112	....	ATF−146	
	L151, L152	....	LAU470K	
	L561, L562	ATH1004	ATH1009	
	L701	....	ATF−151	
	C126, C203, C204	....	CKMYB681K50	
	C127	....	CEAS100M50	
	C128	....	CCDSL330J50	
	C129	....	CKDYF103Z50	
	C130, C160	ACG1021	ACG1016	
	C151	CEANP4R7M35	CEAS100M50	
	C167	CCCSL101J50	CCCSL221J50	
	C203, 204	....	CKMYB681K50	
	C205−C224	....	CKMYB391K50	
	C225, C226	....	CKDYB821K50	
	C523, C524	CCCSL080D500	CCCSL060D500	
	C527, C528	....	CKMYB221K50	
	C555, C556, C558	....	CEAS2R2M100	
	R126	....	RD1/8PM224J	
	R127	....	RD1/8PM473J	
	R128, R130	....	RD1/8PM472J	
	R129	....	RD1/8PM222J	
	R142	....	RD1/8PM102J	
	R152	RD1/8PM913J	RD1/8PM753J	
	R159, R160	RD1/8PM822J	RD1/8PM392J	
	R161, R162	RD1/8PM123J	RD1/8PM183J	
	2 Serial F.E. module assembly	AXQ1002	....	
	4 Serial F.E. module assembly	....	AXQ1004	
	Antenna terminal (4P)	AKA1010	....	
	Antenna terminal (2P)	....	AKA1012	

SP SWITCH assembly (HEWZ type)

The SP SWITCH assembly (HEWZ type) is the same as the SP SWITCH assembly (HE type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C571, C572	....	CKDYB392K50	
⚠	R573, R574	....	RS1PMF681J	

6. FOR SX−339/HB AND HEWZ TYPES

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56×10^1 561.......................... RD1/4PS 5 6 1 J
47kΩ 47×10^3 473.......................... RD1/4PS 4 7 3 J
0.5Ω 0R5.. RN2H 0 R 5 K
1Ω 010.. RS1P 0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562×10^1 5621........................ RN1/4SR 5 6 2 1 F

CONTRAST OF MISCELLANEOUS PARTS

The SX−339/HB and HEWZ types are the same as the SX−339/HE type with the exception of the following sections

Mark	Symbol & Description	Part No.			Remarks
		SX−339/ HE type	SX−339/ HB type	SX−339/ HEWZ type	
	COMPLEX assembly	AWZ3312	AWZ3312	AWZ3311	
	SP SWITCH assembly	Non supply	Non supply	Non supply	
	LINE FILTER assembly	....	....	Non supply	
	SP TERMINAL assembly	Non supply	Non supply	Non supply	
⚠	C1 Power capacitor (0.022/AC400V)	ACG1030	ACG1030	....	
⚠	C1 Power capacitor (0.1/AC250V)	....	....	ACE−507	
⚠	AC Power cord	ADG1021	ADG1085	ADG1021	
	Screw (EARTH)	....	....	ABA1047	
	FM antenna	ADH1004	ADH1004	....	
	FM antenna assembly	....	....	ADH1002	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1182	....	....	
	Operating instructions (English)	....	ARB1292	....	
	Operating instructions (German)	....	....	ARC1250	

COMPLEX assembly (AWZ3311)

The COMPLEX assembly (AWZ3311) is the same as the COMPLEX assembly (AWZ3312) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3312	AWZ3311	
	Q111	....	2SC1740S	
	F101, F102	ATF−126	....	
	F101	....	ATF−119	
	F102	....	ATF−107	
	F112	....	ATF−146	
	L151, L152	....	LAU470K	
	L561, L562	ATH1004	ATH1009	
	C126, C203, C204	....	CKMYB681K50	
	C127	....	CEAS100M50	
	C128	....	CCDSL330J50	
	C129	....	CKDYF103Z50	
	C130, C160	ACG1021	ACG1016	
	C151	CEANP4R7M35	CEAS100M50	
	C167	CCCSL101J50	CCCSL221J50	
	C203, C204	....	CKMYB681K50	
	C205−C224	....	CKMYB391K50	
	C225, C226	....	CKDYB821K50	
	C523, C524	CCCSL080D500	CCCSL060D500	
	C527, C528	....	CCCSL221J50	
	C555, C556, C558	....	CEAS2R2M100	
	R126	....	RD1/8PM224J	
	R127	....	RD1/8PM473J	
	R128, R130	....	RD1/8PM472J	
	R129	....	RD1/8PM222J	
	R142	....	RD1/8PM102J	
	R152	RD1/8PM913J	RD1/8PM753J	
	R159, R160	RD1/8PM822J	RD1/8PM392J	
	R161, R162	RD1/8PM123J	RD1/8PM183J	
	3 Serial F.E. module assembly	AXQ1003	....	
	4 Serial F.E. module assembly	....	AXQ1004	
	Antenna terminal (4P)	AKA1010	....	
	Antenna terminal (2P)	....	AKA1012	

SP SWITCH assembly (HEWZ type)

The SP SWITCH assembly (HEWZ type) is the same as the SP SWITCH assembly (HE type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C571, C572	....	CKDYB392K50	
⚠	R573, R574	....	RS1PMF681J	

SP TERMINAL assembly (HEWZ type)

The SP TERMINAL assembly (HEWZ type) is the same as the SP TERMINAL assembly (HE type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C951−C954	....	CKDYF103Z50	
	C955−C958	....	CCDSL271J50	
	L951−L954	....	ATH−133	
⚠	R951−R954	....	RD1/2PMF101J	
⚠	R955−R958	....	RD1/4PMF100J	

Mark	No.	Description	Parts No.
LINE FILTER ASSEMBLY (HEWZ type)			
COIL			
	L701	LINE FILTER	ATF−151

7. SPECIFICATIONS

Amplifier Section

[SX-339]

Continuous Power Output (both channels driven, DIN)*	
1 kHz, T.H.D. 1 %, 4 Ω	85 W + 85 W
20 Hz – 20 kHz, T.H.D. 0.07 %, 8 Ω	55 W + 55 W
Dynamic power output (with EIA test signal)	
2/4/8 Ω	120/110/80 W
Total Harmonic Distortion*	
1 kHz, 55 W, 8 Ω	0.01 %
20 Hz – 20 kHz, 55 W, 8 Ω	0.07 %
Damping factor 1 kHz, 8 Ω	27
Input (Sensitivity/Impedance)	
PHONO	2.5 mV/47 kΩ
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	150 mV/47 kΩ
Phono Overload Level (T.H.D. 0.08 %, 1,000 Hz)	
PHONO	130 mV
Output (Level/Impedance)	
TAPE REC	150 mV/2.2 kΩ
Frequency Response	
PHONO (RIAA Equalization)	20 Hz to 20,000 Hz ± 0.5 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	10 Hz to 70,000 Hz $^{+0.5}_{-3.0}$ dB
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO	72 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	97 dB
Signal-to-Noise Ratio (DIN, continuous power/50 mW)	
PHONO	67 dB/60 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	88 dB/63 dB
Tone control	
BASS	± 8 dB (100 Hz)
TREBLE	± 8 dB (10 kHz)

[SX-229]

Continuous Power Output (both channels driven, DIN)*	
1 kHz, T.H.D. 1 %, 4 Ω	55 W + 55 W
40 Hz – 20 kHz, T.H.D. 0.07 %, 8 Ω	39 W + 39 W
Dynamic power output (with EIA test signal)	
4/8 Ω	65/55 W
Total Harmonic Distortion*	
1 kHz, 39 W, 8 Ω	0.01 %
40 Hz – 20 kHz, 39 W, 8 Ω	0.07 %
Damping factor 1 kHz, 8 Ω	27
Input (Sensitivity/Impedance)	
PHONO	2.5 mV/47 kΩ
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	150 mV/47 kΩ
Phono Overload Level (T.H.D. 0.08 %, 1,000 Hz)	
PHONO	130 mV
Output (Level/Impedance)	
TAPE REC	150 mV/2.2 kΩ
Frequency Response	
PHONO (RIAA Equalization)	20 Hz to 20,000 Hz ± 0.5 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	10 Hz to 70,000 Hz $^{+0.5}_{-3.0}$ dB
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO	72 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	97 dB
Signal-to-Noise Ratio (DIN, continuous power/50 mW)	
PHONO	67 dB/60 dB
CD, VCR/LINE, TAPE 1/DAT, TAPE 2	88 dB/63 dB
Tone control	
BASS	± 8 dB (100 Hz)
TREBLE	± 8 dB (10 kHz)

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	
Model SX-229	12.1 dBf, IHF (1.1 µV/75 Ω)
Model SX-339	11.3 dBf, IHF (1.0 µV/75 Ω)
50 dB Quieting Sensitivity	
Model SX-229	
MONO	17.3 dBf (2.0 µV/75 Ω)
STEREO	40.2 dBf (28 µV/75 Ω)
Model SX-339	
MONO	16.4 dBf (1.8 µV/75 Ω)
STEREO	38.1 dBf (22 µV/75 Ω)
Sensitivity (DIN)	
MONO	0.9 µV/75 Ω
STEREO	29 µV/75 Ω
Signal-to-Noise Ratio	
MONO	78 dB (at 85 dBf)
STEREO	73 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN)	
MONO	70 dB
STEREO	66 dB
Distortion	
STEREO	0.3 % (1 kHz)
Alternate Channel Selectivity	55 dB (400 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz (± 1 dB)
Antenna Input	300 Ω balanced, 75 Ω unbalanced

AM Tuner Section

Frequency range	531 kHz to 1,602 kHz
Sensitivity	
IHF, Loop antenna	300 µV/m
Selectivity	25 dB
Signal-to-Noise Ratio	53 dB
Antenna	AM Loop Antenna

Miscellaneous

Power Requirements	a.c. 240 Volts ~, 50/60 Hz
Power Consumption	
Model SX-229	250 W
Model SX-339	500 W
Dimensions	420 (W) X 125 (H) X 336 (D) mm
Weight (without package)	
Model SX-229	5.9 kg
Model SX-339	7.0 kg

Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Operating Instructions	1

[SX-339 only]

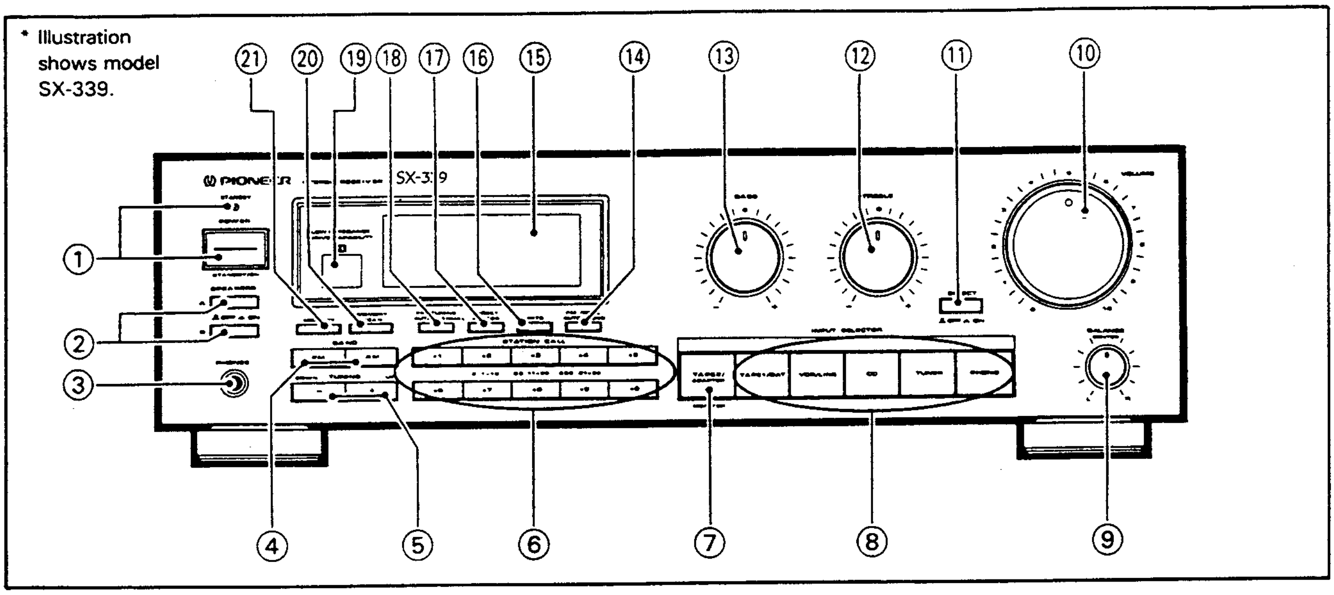
Remote control unit	1
Dry cell battery (size "AAA" (IEC R03/UM-4))	2

NOTE:

Specifications and design subject to possible modification without notice due to improvements.

* *Measured by audio spectrum analyzer.*

8. PANEL FACILITIES



* Illustration shows model SX-339.

[SX-339]

① POWER (STANDBY/ON) switch/indicator

This is the switch for electric power.

ON:	When set to the ON position, power is supplied and the unit becomes operational.
STANDBY:	When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When the STANDBY indicator lights, the unit is in STANDBY.

- The accessory remote control unit can also be used to operate the STANDBY/ON and SLEEP functions of this switch.
- When not using the unit for a long period, disconnected the power cord.

[SX-229]

① POWER switch

When this switch is pressed, power is supplied to the unit.
Press the switch again to turn power OFF.

[Timer ON/OFF possible]
When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE (SX-229, SX-339):
When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

② SPEAKERS buttons (■ OFF, ▬ ON)

These are used to select the speaker through which you wish to listen.

A: When the speakers connected to A terminals are in use.
B: When the speakers connected to B terminals are in use.

- Turn both A and B speakers to the OFF position when only headphones are in use.

NOTE FOR SX-229:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

③ PHONES jack

Connect the plug on your headphones to this jack. To listen to a program through the headphones, set both SPEAKERS A and B buttons to the OFF position.

④ BAND Selector buttons

These buttons are used to select either AM or FM reception.

AM: Push this button for AM reception.
FM: Push this button for FM reception.

⑤ TUNING buttons (DOWN, UP)

UP:	The FM or AM band is scanned in the direction of increasing frequency.
DOWN:	The opposite operation to that of the UP button takes place.

⑥ STATION CALL buttons

These buttons are used to preset and recall desired broadcasting stations.

⑦ TAPE 2/ADAPTOR MONITOR button

Switch on when using a cassette deck or audio adaptor component connected to the TAPE 2/ADAPTOR jacks.

⑧ INPUT SELECTOR buttons

Use to select playback source.

[TAPE 1 /DAT] – Press when listening to tape playback with the cassette deck 1 or digital audio tape deck.
[VCR/LINE] – Press when listening to programs from a component connected to the VCR/LINE terminals.
[CD] – Press when listening to compact disc playback on a CD player.
[TUNER] – Press when listening to AM or FM broadcasts.
[PHONO] – Press when listening to record playback on a turntable.

⑨ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position and if the left side is louder, turn toward the R position.

NOTE:
This control does not operate when the DIRECT button is in the ON position.

⑩ VOLUME control

Use to adjust volume level.

⑪ DIRECT button (■ OFF, ▬ ON)

Use this button when you do not wish to pass the output from input terminal through the various frequency adjusting circuits (TREBLE, BASS). When this button is on, the BALANCE control does not operate.

⑫ TREBLE tone control

Use to adjust high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

- *At volume levels lower than "4" the set tone control effect is obtained.*
  At volume levels higher than "4" the effect becomes increasingly weaker.
  Near maximum volume, there is no effect.
- *This control does not operate when the DIRECT button is in the ON position.*

⑬ BASS tone control

Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

- *At volume levels lower than "4" the set tone control effect is obtained.*
  At volume levels higher than "4" the effect becomes increasingly weaker.
  Near maximum volume, there is no effect.
- *This control does not operate when the DIRECT button is in the ON position.*

⑭ FM MODE AUTO/MONO selector button

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the FM MONO indicator is lit.

Auto stereo mode:

Normally leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo sound.

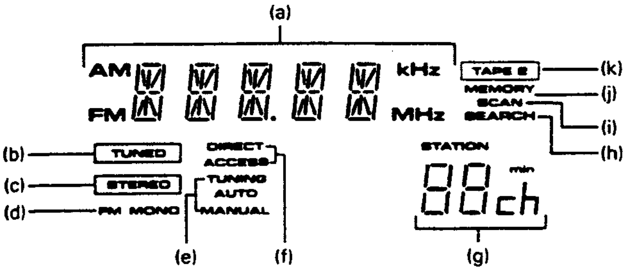
Monaural mode:

When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:

This button has no effect on reception of AM broadcasts.

⑮ OPERATION DISPLAY panel



(a) Indicates the function or frequency (SX-229, SX-339) or SLEEP (SX-339 only).
(b) TUNED indicator
(c) FM STEREO indicator
(d) FM MONO indicator
(e) TUNING AUTO/MANUAL indicator
(f) DIRECT ACCESS tuning indicator
(g) Indicates channel, STATION CALL number (SX-229, SX-339) or sleep time (SX-339 only).
(h) SEARCH indicator (SX-339 only)
(i) SCAN indicator
(j) MEMORY indicator
(k) TAPE 2 monitor indicator.

⑯ HITS (Hyper Intelligent Tuning System) button (SX-339 only)

Press this button to automatically search for and tune in broadcasts that can be received.

⑰ DIRECT ACCESS tuning button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.
If the input station falls outside of the receiver's tuning range, the display section will display a message: "UPPER" if the frequency is too high and "LOWER" if it is too low.

⑱ FM TUNING AUTO/MANUAL button

Works during FM reception.
Use this button to select either the AUTO mode or the MANUAL mode.
When the "AUTO" indicator is lit, the receiver is in the AUTO mode

⑲ Remote sensor window (SX-339 only)

⑳ MEMORY SCAN button

This button is used for station memory scan.

㉑ MEMORY button

When the unit is in the frequency display mode, pressing this button will result in the memorization of the current broadcast band, reception frequency, and FM AUTO/MONO mode.